

# 10th Standard

# Science

Half Yearly Exam 2022

Various District
Question Paper Collection

|            | Hall   | Yearly Exam  | mation - 20                          | 122  |
|------------|--|--|--------------------------------------|--|
| 10         | - Std Karur  | SCIENC   | CE                                   | 1041   |
| Tin        | ne: 3.00 Hrs.  |  |                                      | Marks : 75   |
|            | ii) Choose the alternatives an                                 | r all the questions<br>most appropriated<br>write the option                                       | e answer fro                         | 12 X 1 = 12<br>m the given four<br>he corresponding                |
| 1.         | a) Newton's third  |  | b) Newton's la                       | s) is/(are) required?<br>w of gravitation                          |
| 2.         | The eye defect '   | Presbyopia' can be   | corrected by                         | d) Bifocal lenses  |
| 3.         | Kilowatt hour is t   | he unit of   |                                      |  |
| 4.         | isotop   | o) conductivity c) e be is used for treatr   | nent of cancer.                      | <ul> <li>d) electrical power</li> <li>n d) Radio Nickel</li> </ul> |
| 5.         | 1 mole of any sub  | b) Radio Cobait<br>ostance contains<br>b) 6.023X10 <sup>-23</sup> c)                               | molecu                               | iles.  |
| 6.         | A 25% alcohol so<br>a) 25ml alcohol ir                         | lution means   |                                      | l in 25 ml of water  |
| 7.         | type compound it   | of an organic comp   | ound is 3 Methy                      | arbon - di - sulphide<br>I butane 1-ol. What                       |
| 8.         | Which is formed  | ) Carboxylic acid<br>during anaerobic re   | spiration?                           | d) Alcohol   |
| 9.         | <ul> <li>a) Carbohydrate</li> <li>The wall of human</li> </ul> | b) Ethyl alcohol<br>n heart is made of   | c) Acetyl COA                        | d) Pyruvate  |
| 10.        | a) Endocardium b<br>The hormone whi                            | ) Epicardium c) I<br>ch has positive effe  | Myocardium o                         | d) All of the above  |
| 11.,       | a) Cytokinin b   | ) Auxin  | c) Gibberellin                       | d) Ethylene  |
| 7          | condition of zygo  | te is  |                                      | rom of zygote. The   |
| 12.        | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,                        | ndition seen in  | c) triploid                          | . 0.40 - 0.00000.00400000000000000000000                           |
|            | Note: Answer ar  | ) Diabetes mellitus<br>ny seven questions  |                                      | ipidus d) AIDS  22 is compulsory.                                  |
| 13.<br>14. | State whether the Why? a) According is inversely propo         | ses of `Myopia'? following statemer g to Charle's law, at rtional to volume. electric current is t | nt are true or fa<br>constant pressu | 7 X 2 = 14<br>lse, if false explain.<br>Ire the temperature        |
|            |  | HMD 10 -   | ூர் வகுப்பு அறி                      | மான் (EM) பக்கர்-1   |

- 15. Explain why the ceilings of concert halls are curved?
- What is rust? Give the equation for formation of rust? 16.
- 17. A solution was prepared by dissolving of 25g of sugar in 100g of water. Calculate the mass percentage of solute?
- Write any two characteristics of chemical equilibrium. 18.
- Why are the rings of cartilages found in trachea of rabbit. 19.
- What is bolting? How was it induced artificially? 20.
- 21. Expand the following abbreviations, a) IDDM b) CHD.
- 22. What is the aim of crop improvement? Note: Answer any seven questions.

Question No. 32 is compulsory.

- 23. a) What is refractive index? b) Why are traffic signals red in colour?
- Define electric potential and potential difference.
- 25. Match the following.

#### Column B Column A

- a) Compressions 1) Infrasonic
- b) 22KHZ Echo c) 10 HZ 3) Ultrasonic
- 4) High pressure region d) Ultra sonography
- 26. a) Define: Relative atomic mass. b) Define: Atomicity.
- In what way hygroscopic substances differ from deliquestcent substances.
- 28. a) What is photosynthesis and where in a cell does it occur?
  - b) Write the reaction for photosynthesis.
- 29, a) What is the importance of values in the heart?
  - b) Why is sinoatrial node called the Pace maker of heart?
- 30. a) What is pollination?
  - b) State the important of pollination.
- a) Why is Archaeopteryx considered to be a connecting link?
  - b) How can you determine the age of the Fossils?
- 32. What precautions can be taken for preventing heart disease?
  - Note: Answer all the questions.

- 33. a) i) Define inertia, give its classification. ii) Differentiate mass and weight. (OR) b) i) Who discovered natural radio activity?
  - ii) In Japan, some of the new born children are having congenital diseases.
  - iii) Give any two uses of radio isotopes in the field of Agriculture?
- i) Give the salient features of "Modern atomic theory" (OR) 34.
  - ii) How ethanol manufactured sugarcane.
- a) i) Enumerate the function of blood. ii) Guard cells are responsible for 35. opening and closing of stomata. Give reason for this statement. (OR)
  - b) i) What are the agents of soil erosion?
  - ii) Solar energy is renewable energy. How?
  - iii) What is the importance of rain water harvesting?

HMD 10 – ஆம் வகுப்பு அறிவியல் (EM) பக்கம் – 2 ,

Thriupur

# HALF YEARLY EXAMINATION - 2022

| -     | D - X                                      |  | SCIENCE  | MARKS: 75  |
|-------|--|--|--|--|
| LIN   | ME: 3.00 Hrs                               |  |  |  |
|       |  |  | PART - I   | I THE POWER OF THE PARTY   |
| 1.    | radius half that of the                    | s measure<br>Earth the   | d on planet Earth as <i>M</i> kg. \ n value will bekg a)   | $12 \times 1 = 12$<br>When it is taken to a planet of $4M$ b) $2M$ c) $M/4$ d) $M$   |
|       |  | b) 100   | ) watt hour c) 10 watt h   |  |
|       | a) Lead oxide b)                           | Iron   | tect us from gamma radiation c) Lead d) Aluminiu   |  |
| 4.    | Which of the following                     | g represer   | its I amu?   | nen atom   |
|       |  |  | b) Mass of a hydro<br>atom d) Mass of 0-16 ato   |  |
|       |  |  | orm amalgam a) Ag b) F   |  |
|       | Which of the following                     |  |  |  |
|       |  |  | ners c) Esters d) A  | Idenydes   |
| 7.    |  |  | he of the root.  |  |
|       |  |  | c) pericycle (d) e   | ndodermis  |
| 8.    | A patient with blood of blood should be us | group 'O' v  | vas injured in an accident an  | d has blood loss. Which group  |
| 0     |  |  | e effect on opical dominance   |  |
| 3.    |  |  | c) Gibberellin d) E  |  |
| 10    | Which method of cro                        | op improve   | ment can be practised by a   | armer if he is inexperienced?  |
|       |  |  | election c) pureline select  |  |
| 11.   | An inexhaustible res                       |  | The state of the s | nach der la gir fa vertige   |
| 707.5 | a) wind power b)                           |  |  | d) all the above   |
| 12.   | All files are stored in                    |  | a) folder b) b   | ox c) paint d) scanner   |
| H.    | Answer any seven                           | questions  | . Q.No.22 is compulsory  | 7 x 2 = 14   |
| 13.   | State Rayleigh's saw                       | of scatter   | ing.   | the property of  |
| 14.   | What is the role of the                    | ne earth wi  | re in domestic circuits?   | advente it a complete  |
| 15.   | Match the following:                       |  | the state of the state of  | Mary Mary Rock IV  |
|       | a) Infrasonic                              |  | compressions   | NOT SHOW I SHOW I SHOW   |
|       | b) Echo                                    |  | 22 KHz   | William Town From Street   |
|       | c) ultrasonic                              | - 10 Pm  | 10 Hz  |  |
| 202   | d) High pressure re                        | The state of the s | Ultrasonography  | Service of the servic |
|       | Writes the alloys of                       |  | eel and its uses?  | In the Wind at the same  |
| 17    | . Match the following :                    |  | Carebash   | A STATE OF THE PARTY OF THE PAR |
|       | a) Nissil's granules                       |  | Forebrain  |  |
|       | b) Hypothalamus                            |  | Peripheral nervous system  | "  |
|       | c) Cerebellum<br>d) Schwann cell           | THE STATE OF   | Cyton  | and the second second  |
|       | OF CHIMATIN CON                            | 10 May 1   | - India presim   |  |

10 - SCIENCE - Page 1

- 18. Draw and label the structure of a pollen grain.
- 19. How does insulin deficiency occur?
- 20. Fill in the blanks:
  - a) Chipho movement is initiated against ......
  - b) The blood sucking habit of leech is know as ........
- 21. Why fossil fuels are to be converted?
- 22. The hydroxyl ion concentration of a solution is 1 x 10 M. What is the pOH of the solution?

#### PART - III

#### Answer any seven questions. Q.No.32 is compulsory

7 x 4 = 28

- Distinguish between linear, arial and super ficial expansion.
- 24. a) Define one roentgen
  - b) Compare any two properties of alpho beta and gamma radiation.
- 25. Write applications of Avogadra's law?
- 26. a) Define Hydrated salt
  - b) What happens when MgSo<sub>4</sub>.7H<sub>2</sub>O is heated? Write the appropriate equation?
- 27. What is called homologous series? Give any three of its characteristic?
- 28. Name the three basic tissues systems in flowering plants.
- 29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
- 30. How a cancer cell differ from a normal cell?
- 31. What do you understand by the term phenotype and genotype?
- 32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4:7. Find the ratio of their accelerations due to gravity.

#### PART - IV

# Answer all the questions. Draw diagram whereever necessary

 $3 \times 7 = 21$ 

- 33. a) State joule's law of heating?
  - b) An alloy of nickel and chromium is used as the heating element. Why?
  - c) How does a fuse wire protect electrical appliances? (OR)
  - a) Compare between Natural and Artificial Radioactivity?
  - b) Writes the uses of nuclear reactor?
- 34. a) Define Relative atomic mass
  - b) Give the salient features of "Modern atomic theory" (OR)
  - a) How does pH play an important role in everyday life?
  - b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
- 35. a) i) Write the physiological effects of Gibberellin.
  - ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? (OR)
  - b) i) Enumerate the importance of forest
    - ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

10 - SCIENCE - Page 2

10

Coimbatore

Reg. No.

Max. Marks: 75

Time: 3.00 hrs.

Half-Yearly Examination - 2022 SCIENCE

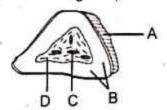
PART - I

12 x 1 = 12

- Choose the best answer
- 1. The unit of 'g' is ms-2. It can be also expressed as..........
  - a) cm s<sup>-1</sup> b) Nkg<sup>-1</sup> c) Nm<sup>2</sup> kg<sup>-1</sup> d) cm<sup>2</sup> s<sup>-2</sup>
- The frequency which is audible to the human ear is.......
  - a) 50 KHz b) 20 KHz c) 15000 KHz d) 10000 KHz
- ......isotope is used for the treatment of cancer
  - a) Radio iodine b) Radio cobalt c) Radio carbon d) Radio nickel
- 1 mole of any substance contains.....molecules.
  - a) 6.023 x 10<sup>23</sup> b) 6.023 x 10<sup>-23</sup> c) 3.0115 x 10<sup>23</sup> d) 12.046 x 10<sup>23</sup>
- Powdered CaCO<sub>3</sub> reacts more rapidly than flaky CaCO<sub>3</sub> because of ......
  - a) large surface area b) high pressure c) high concentration d) high temperature
- Rectified spirit is an aqueous solution which contains about......of ethanol.
  - a) 95.5% b) 75.5% c) 55.5% d) 45.5%
- Which is formed during anaerobic respiration.
  - a) carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
- 8. The outer most layer of three cranial meninges is.......
  - a) arachnoid membrane b) piamater c) duramater d) myelin sheath
- - a) zoospores b) conidia c) zygote d) chlamydomonas
- 10. The 'use' and disuse theory was proposed by.......
  - a) Charles Darwin b) Ernest Haeckel c) Jean Baptiste Lamarck d) Gregor Mendel
- 11. Global warming will cause......
  - a) raise in level of oceans b) melting of glaciers c) sinking of islands d) all of these
- 12. Where you will create category of blocks?
  - a) Block palette b) Block menu c) script area d) sprite

#### PART - II

- II. Note: Answer any seven questions. Question No.22 is compulsory.
- 13. State Rayleigh's law of scattering.
- 14. Give any two uses of radio isotopes in the field of agriculture?
- 15. A hot saturated solution of copper sulphate forms crystals as it cools why?
- 16. Differentiate reversible and irreversible reactions?
- Name the simplest ketone and give its structural formula.
- 18. How is diastema formed in rabbit?
- 19. Draw the given picture and label the parts A, B, C, D.



10 - Science - 1

- 20. What do you understand by the term phenotype and genotype?
- 21. What are the advantages of using biogas?
- 22. What will be the frequency of sound having 0.20 m as its wavelength, when it travels with a speed of 331 ms<sup>-1</sup>?

#### PART - III

III. Answer any seven of the following. Question No.32 is compulsory.

 $7 \times 4 = 28$ 

- 23. a) Define Calorie.
  - b) What is co-efficient of real expansion?
- 24. Write any four uses of LED bulb.
- a) Name two animals, which can hear ultrasonic vibrations.
  - b)State soddy and Fajan's displacement law.
- 26. a) What are alloys? Give an example.
  - b) Give two reasons for alloying?
- 27. a) Draw and label the structure of oxysomes?
  - b) What is respiratory quotient?
- 28. Enumerate any four functions of blood?
- a) Write the events involved in the sexual reproduction of a flowering plant.
  - b) Mention the advantages of that event.
- 30. Define Ethnobotany and write its importance?
- 31. Distinguish between
  - a) Somatic gene therapy and germ line gene therapy.
  - b) Undifferentiated cells and differentiated cells.
- 32. The hydroxide ion concentration of a solution is 1 x 10<sup>-11</sup> M. What is the pH of the solution?

#### PART - IVI

Note: Answer all questions. Draw diagrams wherever necessary

 $3 \times 7 = 21$ 

Differentiate the eye defects: Myopia and Hypermeteropia.

(OR)

Compare the properties of alpha, beta and gamma radiations.

- 34. i) N₂ + 3H₂ → 2NH₃ (The atomic mass of nitrogen is 14, and that of hydrogen is 1)
  - 1 mole of Nitrogen = (.....g) + 3 moles of hydrogen = (.....g) → 2 moles of ammonia = (.,....g)
  - ii) Give any three salient features of modern atomic theory.

(OR)

What is called homologous series? Give any three of its characteristics?

Illustrate the structure and funtions of brain.

(OR)

What is soil erosion? How will you prevent soil erosion?

| Ts1  | Co   | ommon Half Ye               | strict Common  | Examinat       | ions<br>mber 2022                |                         |
|------|--|-----------------------------|--|----------------|----------------------------------|-------------------------|
| 2    | 1-12-2022  |                             | Standard   | 10             |                                  |                         |
| 100  |  |                             |  |                |                                  | Market 75               |
| Time | : 3.00 Hrs.  |                             | SCIENC   | =              |                                  | Marks: 75               |
|      |  |                             | PART-I   |                |                                  |                         |
| * #  | Answer all the   | questions.                  |  | outher wastern |                                  | 12×1=12                 |
| * (  | hoose the m  | ost appropria               | te answer fr   | om the gi      | ven four a                       | iternatives.            |
|      |  | II law is applic            | able   | h) for 2       | andu in me                       | tion                    |
|      |  | dy is at rest               |  | d) only f      | oody in mo                       | ith equal masses        |
|      | c) both a a  | and b                       |  | a) only i      | of Doules w                      | nur equal masses        |
|      | 2) Speed of II   | ght in air or va<br>1 b) 3> | 108 ms <sup>-1</sup>   | c) 3 48×       | 10 <sup>7</sup> ms <sup>-1</sup> | d) 348 ms <sup>-1</sup> |
|      | a) 330 ms  | - U) 32                     | of   | c) 5.10        | 10 1115                          |                         |
|      | 3) Kilowatt ho   |                             | OI .   | b) condu       | ıctivity                         |                         |
|      | <ul><li>a) resistivi</li><li>c) electrica</li></ul>  | l energy                    |  | d) electr      | ical power                       | MOL                     |
|      | 4) Velocity of   | sound in the a              | tmosphere o  | f a planet     | is 500 ms                        | 1. The minimum          |
|      | distance he  | tween the so                | urces of soun  | d and the      | obstacle t                       | o hear the echo,        |
|      |  | tour tie's                  |  |                |                                  |                         |
|      | a)-17m   | b) 20                       | m  | c) 25m         | 6                                | d) 50m                  |
| 9    | 5) Artificial ra   | dioactivity was             | disovered b  |                |                                  |                         |
|      | a) Bequerel  | b) Ire                      | ne Curie   | c) Roent       | gen                              | d) Neils Bohr           |
|      | 5) In the nucl   | eus of anCa40,              | there are  |                |                                  |                         |
|      | a) 20 proto  | ns and 40 neu               | trons  | b) 20 pro      | tons and                         | 40 neutrons             |
| 11 7 | 7)is   | a relative perc             | xidic propert  | у.             |                                  |                         |
| *1   | a) Atomic ra   |                             |  | b) Ionic r     | adii                             |                         |
|      | c) Electron  | affinity                    | 1  | d) Electr      | o negativi                       | :y                      |
| - 8  | ) The brain o  | f leech lies ab             | ove the  |                |                                  | 34W/44200000            |
|      | a) Mouth   | b) Bu                       | ccal cavity  | c) Pharyr      |                                  | d) Crop                 |
| 9    | ) The centror  | nere is found a             | at the centre  | of the         | chro                             | mosome.                 |
|      | a) Telocent  | ric b) Me                   | tacentric  | c) Sub-me      | etacentric                       | d) Acrocentric          |
| 10   | ) The best wa  | y of direct da              | ting fossils of  | recent or      | igin is by                       |                         |
|      |  | bon method                  |  |                | m lead me                        |                         |
|      | c) Potassiur   | argon meth                  | nod  | a) Both (      | a) and (c)                       | of adecaseling          |
| 11   | ) Tobacco co   | nsumption is                | known to s   | timulate       | secretion                        | of adrenaline.          |
|      | The state of the s | nent causing                |  |                | ala.                             | d\ Lontin               |
| -    | a) Nicotine  |                             | nic acid   | c) Curcur      | nin                              | d) Leptin               |
| 12   | ) Which softw  |                             |  | ation?         |                                  | d) Caratab              |
| - 6  | a) Paint   | b) PDF                      |  | c) MS wo       | ra                               | d) Scratch              |
| . \  |  |                             | DART II  |                |                                  |                         |
| 4    |  |                             | PART - II  |                |                                  | 7×2=14                  |
|      | Answer any s   |                             |  |                |                                  | /x2=14                  |
| Les  | Question No  | . 22 is compu               | ilsory]  | the resea      |                                  |                         |
|      | 'X' rays shou  |                             |  | the reaso      | n.                               |                         |
| 14)  | Explain Ester  | ification react             | ion.   |                |                                  | TO MALE AND CONTRACTOR  |
| 15)  |  |                             | racteristics o   | r wheat th     | at neiped                        | India to achieve        |
|      | high product   |                             | AND COMMON PARTY OF THE STATE OF | ere a le       | on discuss                       | -2                      |
|      | What precau  |                             |  | renting ne     | art diseas                       | e?                      |
|      | How are e-w  |                             |  |                |                                  |                         |
| 18)  | Write a short  |                             |  |                |                                  |                         |
| 19)  |  | aize hybrids ri             |  |                |                                  |                         |
|      | Why does the   |                             |  |                |                                  |                         |
|      | What is the in   |                             |  |                |                                  |                         |
| 22)  | Vinu dissolve  | s 50g of suga               | r in 250ml o   | f hot wate     | r, Sarath                        | dissolves 50g of        |
|      |  | 250 ml of co                | ld water. Who  | will get f     | aster disso                      | olution of sugar?       |
|      | and why?   |                             |  |                |                                  |                         |

www.waytosuccess.org for all study materials visit our website https://www.zealstudy.me/ Ts10S PART-III Note: Answer any seven questions. [Question No. 32 is compulsory] 23) Fill in the blanks: 1) Position is an\_ 100% pure ethanol is called \_ causes stomatal closure. Blood cancer is called 24) Analogy type questions: Chemotherapy : Chemicals Radiation therapy: \_ Hyper tension : Hyper cholesterolomia Glycosuria: Nuclear fusion : Extreme temperature Nuclear fission: Increasing crops : Radio phosphorous Effective functioning of heart: SIVAKUMAR M 25) Match: Sti RAMO MATO CHES a) Co-60 Age of fossil Function of heart b) I-131 Vallam-622809 Leukemia c) Na-24 Tenkasi District. Thyroid disease d) C-14 26) State whether True or False, if false write the correct statement: Cancer causing genes are called oncogenes. AIDS is not transmitted by contact with a patient's clothes. On dipping a pH paper in a solution it turns into yellow, then the solution is basic. Nuclear fusion is more dangerous than nuclear fission. 27) Cell phone towers should be placed far away from the residential area. Why? 28) Enumerate the importance of forest. Differentiate between outbreeding and inbreeding. 30) 1) State Ohm's law. 2) What is the role of the earth wire in domestic circuits? Differentiate between Nuclear fission and Nuclear fusion. 32) Three resistors of resistance 5 ohm (5 $\Omega$ ), 3 ohm (3 $\Omega$ ), and 2 ohin (2 $\Omega$ ) are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit. PART-IV 3×7=21 Note: Answer all the questions. A) i) Compare the properties of Alpha, Beta, Gamma radiations. ii) Which material protects as from radiation? List any five properties of light. i) ii) What is refractive index? 34) A) i) What is homologous series? Give any three of its characteristics. ii) Name the simplest ketone and give its structural formula. (OR) B) i) How is ethanol manufactured from sugarcane? ii) Give any two uses of ethanol. 35) A) What are the sources of solid waste? How are solid wastes managed? (OR) B) i) Changes in life style is a risk factor for occurrence of cardiovascular

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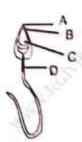
ii) How does insulin deficiency occur?

diseases. Can it be modified? If yes suggest measures for prevention.

| \$ 0 |                 |  |                         |                              | P                     | Reg. No.       | TI           | П       |
|------|-----------------|--|-------------------------|------------------------------|-----------------------|----------------|--------------|---------|
| 10   | R               |  | Half-Yearl              | y Examinati                  |                       | × 1            |              |         |
| Time | : 2.30 hrs.     |  |                         | SCIENCE                      |                       |                | Max. Mar     | rks : 7 |
|      | T               | hirupur  |                         | 77.                          |                       |                |              | -       |
|      |                 | F  |                         | PART - I                     | 25 (                  |                | 1990         |         |
| 0.00 |                 | correct answe  |                         | an commence                  |                       |                | 5 )          | x 1 = 5 |
|      |                 |  | can be correc           |                              |                       |                |              |         |
|      | 0.5             |  |                         | k mirror d) bifoo            | al lens               |                |              |         |
| 1000 |                 | istance is   |                         |                              |                       |                |              |         |
|      |                 | ule c) ohm d)  |                         |                              |                       |                |              | )       |
|      | - 1             |  |                         | gamma radiation              | is.                   | 6              | -            |         |
|      | 11.50           | ACCRECATE TO SECURITY OF THE PERSON OF THE P | ead d) Alumini          |                              |                       |                |              |         |
| 4.   |                 |  | ontainsm                |                              |                       | 150            |              |         |
| 4.1  |                 |  |                         | 5 x 10 <sup>23</sup> d) 12.0 | 46 x 10 <sup>23</sup> |                |              |         |
| 5.   |                 |  | e universal solv        |                              | and the same          |                |              | 30.     |
| -    |                 |  | ) Water d) Alc          |                              | 6                     | 1              |              |         |
| 6.   |                 |  | is used to cure         |                              |                       |                |              |         |
|      | a) Hydrochic    | oric acid b) Hy  | drogen peroxic          | de c) Ammoniur               | n chloride d)         | All the above  |              |         |
| 7.   |                 | actory of the  |                         |                              | V.                    |                |              |         |
| 0    | a) chloropia    | st b) cytoplas   | sm c) mitochor          | ndria d) nucleus             |                       |                |              |         |
| 0.   | vvater which    | is absorbed i  | by roots is trans       | sported to aerial            | parts of the pla      | ant through    |              |         |
| 9.   |                 |  | phloem d) xyle          |                              |                       |                |              |         |
| ٥.   | a) extokinin    | b) auxin d)  | ositive effect or       | apical dominan               | ce is                 |                |              |         |
| 10   |                 |  | gibberellin d) e        | cont origin is by            |                       |                |              |         |
| 10.  | a) radio carl   | on method b  | ling lossils of te      | method of sol                |                       | 10 0000 P      |              |         |
| 11   | Excessive o     | onsumption o   | f alcohol leads         | method c) pota               | ssium - argon         | method d) bo   | th (a) and ( | (b)     |
|      | a) loss of me   | emory b) cirrt   | nsis of liver c         | state of hallucin            | otion di              |                |              | i a     |
| 12.  | All files are   | stored in  | (03,3 01,100, 0)        | State of Hallucin            | ation d) supre        | ssion of brain | function     |         |
|      |                 | box c) pai d   | \$14.00 h               | 100                          |                       |                | -            | 4       |
|      | -,,             |  | , 3331113               | PART - II                    |                       |                |              | 40      |
| II.  | Answer any      | 7 of the follo   | owing. (Ques            | tion number 22               | is compules           | -15/20         |              |         |
| 13.  | Why a span      | ner with a lon   | g handle is pre         | ferred to tighten            | screws in hea         | ry)            | 7 x          | 2 = 14  |
| 14.  | State Boyle'    | s law.   |                         | value to lighten             | SCI CWS III FIEd      | vy venicles?   |              |         |
| 15.  |                 |  | the correct stat        | ement)                       | ent II                |                |              |         |
|      |                 |  |                         | od from left to rig          | ıht.                  |                |              |         |
| 4    |                 |  |                         | present in lesser            |                       | led solvent    |              |         |
| 16.  | Fill in the bla | anks.  |                         |                              | uniount is cal        | ieu solvent.   |              |         |
|      |                 |  | rust is                 | b) 100% pure et              | honol is called       |                |              |         |
| 17.  |                 |  | used in hard w          |                              | Jilor is called       |                | 13.45        |         |
|      | Match the fo    |  |                         |                              |                       |                |              |         |
|      | 1. Brain        | - a) ple   | ura                     |                              | of any and            |                |              | 7       |
| - 1  | 2. Kidney       | - b) car   | 2.0                     |                              |                       | 7.             |              |         |
|      | 3. Heart        | 11/2/10/10   | ninges                  |                              |                       |                |              |         |
|      |                 | : 11 MONES   | 51116 <del>7</del> 0-54 |                              | . *                   |                |              |         |
|      |                 |  |                         | 10 - Science - 1             | E.                    |                |              |         |

d) Pericardium 4. Lungs

Draw the label the parts of sperm cell.



- Name the types of stem cells.
- 21. What are the advantages of practising exercise in daily life?
- 22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

#### PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory)

- 23. Differentiate convex lens and concave lens.
- 24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element
- 25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
- 26. a) Identify the bond between H and F in HF molecule.
  - b) What property forms the basis of identification?
  - c) How does the property vary in periods and in groups?
- 27. Differentiate reversible and irreversible reaction.
- 28. a) How does leach suck blood from the host?
  - b) How does locomotion takes place in leech?
- 29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
  - b) Which hormone is known as stress hormone in plants? Why?
- a) Define Palaeontology?
  - b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?
- 31. Enumerate the functions of forest
- 32. Calculate the number of moles in a) 27 g of At b) 1.51 x 1023 molecules in NH, Ct.

#### PART - IV

#### Answer all the questions.

- 33. a) i) State the universal law of gravitation and derive its mathematical expression.
  - ii) What are the causes of "Myopia". (OR)
  - b) i) List the merits of LED.
  - ii) Write any three features of Natural and artificial radio activity.
- 34. a) i) What is rust? Give the equation for formation of rust.
  - ii) In what way hygroscopic substances differ from delinquescent substances. (OR)
  - b) i) List out the factors influencing the rate of a reaction.
  - ii) What is called homologous series?
  - Give any three of its characteristics.
- 35. a) i) Name the three basic systems in flowering plants.
  - ii) What is transpiration? Give the importance of transpiration. (OR)
  - b) i) Draw and label the structure of a neuron.
  - ii) What precautions can be taken for preventing heart disease?

10 - Science - 2

HALF YEARLY EXAMINATION - 2022 HTv

| 10 | - Std | Thiruvannamalai                               |
|----|-------|---|
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SCIENCE

|     |     |      |     |      | 6. 7. |
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| 454 |     |      | 100 |      | 100   |
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| PART - I  Answer all the questions. 12 X 1  1. Impulse is equal to                       | = 12 |
|--|------|
| 1. Impulse is equal to   | = 12 |
| 1. Impulse is equal to   | 1.0  |
| 이는 항상을 하면 하나는 점점 전혀 살아가면 하는 것을 하고 있었다. 그 나가 되었다면 하는데 |      |
| a) Rate of change of momentum b) Rate of force and time                                  |      |
| c) Change of momentum d) Rate of change of mass  | 1    |
| 2. Unit of temperature is  |      |
| a) Celsius b) Kelvin   |      |
| c) Fahrenheit d) None of the above   |      |
| 3. Gamma radiations are dangerous because  | 5    |
| a) it affects eyes b) it affects tissues   |      |
| c) it produces genetic disorder  |      |
| d) it produces enormous amount of heat   |      |
| 4. Which of the following is a triatomic molecule?                                       |      |
| a) Glucose b) Helium   |      |
| c) Carbon di oxide d) Hydrogen   |      |
| 5. Which of the following is a the universal solvent?                                    |      |
| a) Acetone b) Benzene c) Water d) Alcohol  |      |
| 6 is used as anesthetics.  |      |
| a) Carboxylic acids b) Ethers  |      |
| c) Esters d) Aldehyde  | 100  |
| 7. Rectified spirit in an aqueous solution which contains about                          | of   |
| ethanol.   |      |
| a) 95.5% b) 75.5% c) 55.5% d) 45.5%  | MIL  |
| 8. The coelomic fluid of beech contains  |      |
| a) lymph b) haemoglobin c) cerobro fluid d) spiral flu                                   | iid  |
| 9. Node of Ranvir is found in  |      |
| a) Muscles b) Axons c) Dendrites d) Cyton  |      |
| 10. The plant which propagates with the help of its leaves is                            |      |
| a) Onion b) Neem c) Ginger d) Bryophyllu   | m    |
| 11. Which type of cancer affects lymph nodes and spleen?                                 |      |
| a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma  |      |
| 12. Which software is used to create animation?  |      |
| a) Paint b) PDF c) MS Word d) Scratch  | 1    |
| PART-II 7X2  | = 14 |
| Answer any seven questions. Question No. 22 is compulsory.                               | 1    |
| 13. State Boyle's law.   |      |
| 14. Why are traffic signals red in colour?   | 1    |

V 10 - அறிவியல் (EM) பக்கம் - 1

#### 15. Match the following.

- 1) Electric current Vol
- 2) Potential difference Ohm meter
- 3) Specific resistance Watt
- 4) Electrical power Joule
- 5) Electrical energy Ampere
- State true or false. (If false give the correct statement)
   Sodium Chloride dissolved in water forms a non-aqueous solution.
- 17. What is rust? Give the equation for formation of rust.
- 18. Differentiate reversible and irreversible reactions.
- Write a short note on mesophyll.
- 20. Why are thyroid hormones referred as personality hormone?
- 21. What are allosomes?
- Calculate the gram molecular mass of the Water.

#### PART - III

 $7 \times 4 = 28$ 

# Answer any seven questions. Question No. 32 is compulsory.

- Define inertia. Give its classification.
- Differentiate convex lens and concave lens.
- List the merits of LED bulb.
- 26. Write notes on i) Saturated solution and ii) Unsaturated solution
- 27. Differentiate soaps and detergents.
- 28. List out the parasitic adaptations in leech.
- 29. Write a neat labeled diagram of a neuron.
- 30. How do you differentiate homologous organs from analogous organs?
- Enumerate the importance of forest.
- 32. Calculate the pH of 0.001 molar solution of HCI.

#### PART-IV

### Answer all the questions.

3 X 7 = 21

- 33. State and prove the law of conservation of linear momentum. (OR)
  Differentiate the eye defects: Myopia and Hydpermetropia.
- 34. How does PH play an important role in every day life? (OR)

  How is ethanol manufactured from sugarcane?
- 35. Where are estrogens produced? What is the role of estrogens in the human body? (OR)

Discuss the importance of biotechnology in the field of medicine.

HTV 10 - அறிவியல் (EM) பக்கம் - 2

| 7             |
|---------------|
|               |
| x. Marks : 75 |
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11. Where does alcohol effect immediately after drinking?

b) Auditory region

d) central nervous system

12 All files are stored in the

c) paint

a) Folder

a) eyes

b) box

Part - II

Answer any seven questions. Q.No. 22 is compulsory.

13. State Rayleigh's scattering law.,

14. Give the function of control rods in a nuclear reactor?

15. What is rust? Give the chemical formula

16. Fill up:

i) The normal pH of human blood is -

-- type of reaction. ii) Chemical volcano is an example for ---

17. Draw and label the structure of oxysomes.

C11/10/Sci/1

# 18. Match the following:

- 1. Symplastic pathway lea
- Transpiration plasmodesmata
- Osmosis Pressure In Xylem
- Root pressure pressure gradient
- Write the differences between endocrine and exocrine gland.
- 20. Identify whether the statements are true or false, correct the false statement.
  - a) A typical Mendelian dihybrid ratio of F<sub>2</sub> generation is 3: 1
  - b) A recessive factor is altered by the presence of a dominant factor.
- 21. Define Genetic engineering.
- 22. A torch bulb is rated at 3V and 600mA. Calculate it's power.

#### PART - III

# Answer any seven questions .Q.No: 32 is compulsory,

23. Differentiate mass and weight.

- 24. a) What is the minimum distance needed for an echo?
  - b) Mention two cases in which there is no Doppler effect in sound?
- 25. Give the salient features of Modern atomic theory.
- 26. a) What happens when MgSO, 7H,O is heated? Write the appropriate equation.
  - b) Define solubility.
- 27. Write the characteristics of honco logous series.
- 28. List the parasitic adaptations in Leech.
- 29. Classify neurons based on its structure.
- 30. a) What will happen if you cut planaria into small fragments?
  - b) Name the secondary sex organs in male.
- 31. Write the importance of ethnobotany.
- 32. Calculate the pH of 1 x 104 molar solution of NaOH.

#### PART-IV

#### Answer all the questions in detail.

a) Explain the construction and working of a compound microscope.

(OR)

- b) i) What is the role of the earthwire in domestic circuits?
  - ii) List the merits of LED bulb [any four]
- 34. a) Derive the relation ship between relative molecular mass and vapour density.

(OR)

- b) Write notes on various factors affecting solubility.
- 35. a) i) Enumerate the functions of blood.
  - ii) How are the arteries and veins structurally different from one another?

(OR)

- b) i) Write the physiological effects of gibberellins.
  - ii) What is the role of parathormone?

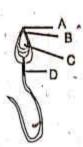
CH/10/Sci/2

7x4 = 28

|     | 1   | 0 R  | Erc                   | ode Half         | f-Yearly Ex  | amination - 20                          | Reg. No  | DIJI 1                                   |
|-----|-----|--|-----------------------|------------------|--|---|--|--|
|     | Tim | ne : 2.30 hrs.   |                       |                  | the state of the s | ENCE                                    |  | Max. Marks .: 7                          |
| . 1 |     |  |                       | 100              | PA   | RT-I                                    |  |  |
|     | 1.  | Choose the   | e correc              | t answer         |  |   | The Part of the Pa | 5 x 1 = 5                                |
|     | 1.  | The eye de   | fect pres             | sbyopia' can b   | e corrected by   |   |  | 2 - 1 - Tell                             |
| à   |     | and the second s |                       | Particular U.S.  |  | or d) bifocal lens.                     |  | - MA 1                                   |
|     | 2.  | SI unit of re  |                       | 11.0             | evoluti E.   |   | 1400   |  |
|     |     | a) mho b) j  | oulė c) d             | ohm d) ohm n     | neter  |   |  |  |
|     | 3.  | apron  | is are us             | ed to protect u  | is from gamma  | a radiations.                           |  |  |
|     |     | a) Lead oxi  | de b) Iro             | n c) Lead d)     | Aluminium  | was die jeer                            | March 1 1 / 1 / 1 / 1  | Jan Brigaria                             |
|     | 4.  | 1 mole of a  | ny subst              | ance contains    | molecule   | s.                                      |  | A Company                                |
|     | .8  | a) 6.023 x 1   | 10 <sup>23</sup> b) 6 | .023 x 10-23 d   | c) 3.0115 x 102  | d) 12.046 x 102                         | 3  |  |
|     | 5.  | Which of the   | e followir            | ng is the unive  | rsal solvent?  | recent - L                              |  |  |
|     |     | a) Acetone   | b) Benz               | ene c) Water     | r d) Alcohol   |   |  | +14                                      |
|     | 6.  | Which one  | of the fol            | lowing is used   | to cure wound  | 17                                      | 11.  | Titles                                   |
|     |     | a) Hydrochl  | oric acid             | b) Hydrogen      | peroxide c) A  | mmonium chlorid                         | e d) All the above   |  |
|     | 7.  | is ATP   | factory o             | of the cells.    | 7.00   |   | S existee =  |  |
|     |     | a) chloropla   | ast b) cy             | toplasm c) m     | nitochondria o   | ) nucleus :                             |  |  |
|     | 8.  | Water which  | h is abso             | rbed by roots    | is transported   | to aerial parts of t                    | he plant through   |  |
|     |     | a) cortex b)   | epiderm               | is c) phloem     | d) xylem   | The second                              | The state of the state   | Water and the                            |
|     | 9.  | The hormon   | ne which              | has positive e   | ffect on apical  | dominance is                            |  | SORE TA                                  |
|     |     | a) cytokinin   | b) auxir              | d) gibberell     | in d) ethylene   | I In the East                           |  |  |
|     | 10. | The best wa  | ay of dire            | ct dating foss   | ils of recent or   | igin is by                              |  |  |
| j   | -U  | a) radio carl  | bon meth              | nod b) uraniu    | m lead method  | d c) potassium - a                      | rgon method d) b   | oth (a) and (b)                          |
|     | 11. | Excessive of   | consump               | tion of alcohol  | l leads to   |   |  |  |
| ì   |     | a) loss of m   | emory b               | ) cirrhosis of l | iver c) state of   | f hallucination d) s                    | supression of brain  | n function                               |
|     | 12. | All files are  | stored in             | 1                | 1  |   |  | e Marija Kjur                            |
|     |     | a) folder b)   | box c) p              | oai d) scanne    | er 🔍   |   |  | lines lines                              |
|     |     | Ten entit  | 4                     |                  | PAI  | RT - II                                 | V Went 1   |  |
|     | 11. | Answer an  | y 7 of th             | e following.     | (Question nu   | mber 22 is comp                         | ulsory)  | 7 x 2 = 14                               |
|     | 13. | Why a spar   | ner with              | a long handle    | is preferred to  | tighten screws in                       | heavy vehicles?  |  |
|     | 14. | State Boyle  | 's law.               |                  | Serve Britis   |   | Transfer of the  |  |
|     | 15. | True or false  | (If false             | give the corre   | ect statement)   |   |  |  |
|     | 1   | a) lonic radi  | us increa             | ses across th    | e period from  | left to right.                          |  |  |
|     |     | b) In a soluti   | ion the c             | omponent whi     | ich is present i   | n lesser amount is                      | s called solvent.  |  |
|     | 16. | Fill in the bla  |                       | 6 6              |  |   |  | , <b>V</b>                               |
|     |     | a) The chen  | nical nan             | ne of rust is,   | b) 100%  | pure ethonol is ca                      | alled  |  |
|     | 17. |  |                       |                  | ard water. Wh  | (6) 이 없는데 보다 요한다면 하면 하는데 하다 다 보다 되었다면요? | Electronic Control   | - 10 - 10 V                              |
|     |     | Match the fo   |                       | 194 J. 100 M     |  |   |  |  |
|     | /   | 1. Brain   | BISSON CONTRACTOR     | a) pleura        |  |   | 7,40   | The second                               |
|     |     | 2. Kidney  |                       | ) capsule        |  | And a second                            |  |  |
|     |     | 3. Heart   | 4                     | ) meninges       |  |   | A STATE OF   |  |
| ,   | 1   |  |                       | A TOWNSON TO THE |  |   |  |  |
|     | 100 |  | -                     |                  | 10 - Sc  | lence - 1                               |  | S. S |

10 - Science -

- 4. Lungs d) Pericardium
- 19. Draw the label the parts of sperm cell.



- Name the types of stem cells.
- 21. What are the advantages of practising exercise in daily life?
- 22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery.

  Calculate their effective resistance and the current flowing through the circuit.

#### PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory)

 $7 \times 4 = 28$ 

- Differentiate convex lens and concave lens.
- 24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element. Why?
- 25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
- 26. a) Identify the bond between H and F in HF molecule.
  - b) What property forms the basis of identification?
  - c) How does the property vary in periods and in groups?
- 27. Differentiate reversible and irreversible reaction.
  - 28, a) How does leach suck blood from the host?
    - b) How does locomotion takes place in leech?
  - 29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
    - b) Which hormone is known as stress hormone in plants? Why?
  - 30: a) Define Palaeontology?
    - b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?
  - 31. Enumerate the functions of forest.
  - 32. Calculate the number of moles in a) 27 g of Al b) 1.51 x 1023 molecules in NH<sub>2</sub>Cl.

#### PART - IV

#### Answer all the questions.

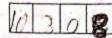
- 33. (a)) State the universal law of gravitation and derive its mathematical expression.
  - ii) What are the causes of "Myopia". (OR)
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- 34. a) i) What is rust? Give the equation for formation of rust.
  - ii) In what way hygroscopic substances differ from dellnquescent substances. (OR)
  - b) i) List out the factors influencing the rate of a reaction.
  - ii) What is called homologous series?
  - iii) Give any three of its characteristics.
- 35. a) i) Name the three basic systems in flowering plants.
  - ii) What is transpiration? Give the importance of transpiration. (OR)
  - b) i) Draw and label the structure of a neuron.
  - ii) What precautions can be taken for preventing heart disease?

10 - Science - 2

# HALF YEARLY EXAMINATION - 2022

| 10 <sup>11</sup> | - Std. | Namakka |
|------------------|--------|---------|
| 10 <sup>11</sup> | - Std. | Namakka |

SCIENCE



|   | Ti      | me : 3.00 Hrs.   |  |  | Mark   | s: 75          |
|---|---------|--|--|--|--|----------------|
|   |         | Total Control of the  |  | PART - L   | 12 x   | 1 = 12         |
|   | 1.      | Choose the best  | answer.  |  |  |                |
|   | 1.      | A convex lens for  | ns a real, diminis   | hed point sized in   | nage at focus. The the   |                |
|   |         | position of the ob   | ject is at   | 90.00  |  |                |
| , |         | a) focus   |  | c) at 2f   | d) between f and   | V .            |
|   | 2.      |  |  |  | ss of that substance is  |                |
|   | 2       | a) positive  | b) negative  | c) zero  | d) none of the al  |                |
|   | э.      | which they were i  |  |  | the same medium fr   | om             |
|   | 100     | a) speed   | b) frequency   | c) wavelength  |  | de la one      |
|   | 4.      | group  |  | Company of the Control of the Contro | The state of the s | - No Ele       |
|   | acti    | a) 17th  | b) 15 <sup>th</sup>  | c) 18 <sup>th</sup>  | d) 16 <sup>th</sup>  | A Charles      |
| 9 | 5.      | Which of the follow  | wing is hygroscop  | oic in nature?   | The state of the s | THE PARTY      |
| 7 |         | a) ferric chloride   |  | ate penta hydrat   | e  |                |
|   |         | c) silica gel  | d) none of the a   |  |  | 20 6 4 8       |
|   | 6.      | TFM in soaps repr  |  |  | The state of the s | and the second |
|   |         | a) mineral   | b) vitamin   |  | d) Carbohydrate  | 72 1 THE ST.   |
|   | 7.      | Dental formula of  |  |  | The same Rossess   | 100            |
|   |         | a) 1023  | <b>b)</b> 2033   | c) <u>2023</u>   | d) 2032  | S Milk         |
|   |         | 2033   | 1023   | 1033   | 1033   |                |
|   | 8.      | Heart of heart is c  | ADD 40A  |  | production and are   | 100            |
|   | 3       | The state of the s | b) AV node   | c)Purkinje fibr  |  |                |
| į | 9.      | which one is re  | e perendad as VI   | astonyland asti  | ical gland, B with B   | 0711 3 31      |
|   |         | . Which type of can  |  | A. 297   | S 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 712            |
| Š | 10.     | a) Carcinoma   |  |  | d) Lymphoma  | Ad went        |
|   | 11.     | Chipko movemen   |  |  | u) cymphoma  | 1 9            |
|   |         | a) Electricity gene  |  | b) Deforestation   | on   | V              |
|   | 1       | c) Green Revoluti  |  | d) Fossil fuels  |  |                |
|   | 12.     | Which is used to b   | uild scripts?  |  |  | 10.00          |
| Á |         | a) Script area   | b) Block palette   | c) Stage   | d) sprite  | 300            |
|   | 1       | A CLASSIC  | -15-50   | and the  |  | 2.14           |
| 4 | 09      |  | 13 AMERICA 10  | ART - II   | 2 2 104  | x2=14          |
|   | 2000    | Answer any 7 que   | and an extended the second of the second | number 22 is con   | npulsory)  |                |
|   | 1000000 | Differentiate mass   |  | 2 ° 7 ' 4  | 2 L Ny=50  |                |
|   |         | State Rayleigh's lav   | 100 miles  | 0 0  | TAR BEST   |                |
|   |         | Why is tungsten m  |  |  | res?   | 130/19         |
|   | 16.     | What is rust? Give   | the equation for fo  | ormation of rust.  | Sim of the American  | WIN CO.        |

17. Match it: Benzene S a) Functional group OH -Potassium sterabe & b) Heterocyclic Alcohol c) Unsalurated Furan 2 d) Soap Ethene 3 e) Carbocyclic 18. What is respiratory quotient? 19. Why is the colour of the blood red? 20. What is sprite? 21. Identify the parts A and B in the given figure. 22. 3.5 litres of etharal is present in 15 litres of aqueous solution of ethanol. Calculate volume precent of ethanol solution.  $7 \times 4 = 28$ PART - III Answer any 7 questions. : (question number 28 is compulsory) 23. a) State Snell's law. b) Why does the sky appear in blue colour? 24. a) What are the factors that affect the speed of sound in gases? b) Why does sound travel faster on a rainy day than on a dry day? 25. State Soddy and Fajan's displacement law. 26. a) Identify the bond between H and F-in HF molecule. b) What property forms the basis of identification? c) How does the property vary in periods and in groups? a) Monocot root and b) Dicot root 27. Differentiate the following 28. The hydroxide ion concentration of a solution is 1 x 10 -11 M. What is the pH of the solution? 29. Classify the following compounds based on the pattern of carbon chain and give their structural formula. iii) Cyclobutane ii) Benzene iv) Furan i) Propane ... 30. List out the parasitic adoptations in leech. 31. Why is the sinoatrial node called the pacemaker o heart? 32. a) What is the importance of rainwater harvesting? b) What would happen if the habitat of wild animals is disturbed? PART - IV  $3 \times 7 = 21$ 33. State and prove the law of conservation of linear momentum a) State Joule's law of heating. b) An alloy of nickel and chromium is used as the heating element why? c) How does a fuse wire protect electrical appliances? 34. Derive the relationship between Relative molecular mass and vapour density. (or) The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H2SO4 forms C and D along with water. D is a gaseous compound. Find A,B,C and D. 35. With a neat labelled diagram describe the parts of a typical angiospermic ovule. (or)

10m-Science -Nmk-Page-2

Suggest measures to overcome the problems of an alcoholic.

updated join our telegram channel https://t.me/zealstudyofficial COMMON HALF YEARLY EXAMINATION - 2022 Standard X Thoothukudi SCIENCE Marks: 75 Part - I Time: 3.00 hrs. 12 x 1 = 12 Choose the correct answer: Impulse is equal to b) rate of force and time a) rate of change of momentum d) rate of change of mass c) change of momentum · 2. The value of universal gas constant a) 3.81 mol-1 K-1 b) 8.03 mol-1 K-1 c) 1.38 mol-1 K-1 d) 8.31 mol-1 K-1 isotope is used for the treatment of cancer. d) radio nickel c) radio carbon b) radio cobalt a) radio iodine 4. The number of periods and groups in the periodic table are .c) 8,18 b) 7,17 a) 6,16 5. Which of the following is not an "element + element -> compound" type reaction? b)  $2K_{(s)} + Br_{s(l)} \rightarrow 2KBr_{(s)}$ a)  $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ d)  $4Fe_{(s)} + 3O_{2(g)} \rightarrow 2Fe_2O_{3(s)}$ c)  $2CO_{(q)} + O_{2(q)} \rightarrow 2CO_{2(q)}$ 6. The secondary suffix used in IUPAC nomenclature of an aldehyde is d) -one b) -oic acid. c) -al The endarch condition is the characteristic feature of c) leaves d) flower a) root b) stem 8. During transpiration there is loss of d) None of the above c) water a) carbon dioxide b) oxygen LH is secreted by b) thyroid gland c) anterior pituitary d) hypothalamus a) adrenal gland 10. The plant which propagates with the help of its leaves is d) bryophyllum c) ginger b) neem a) onion b) Fossil evidences. c) Vestigial organ evidences d) All the above A renewable source of energy is c) nuclear fuel . d) trees a) petroleum b) coal Part - II II. Answer any 7 questions: (Q.No.22 is compulsory) 13. True or False. If false, correct it. a) Increase in the converging power of eye lens cause "hypermetropia" b) The convex lens always gives small virtual image. 14. Match the following

S.Syed Shaban

Symbol used

Component

Variable resistor

Resistor

iii) Ammeter

iv) voltmeter

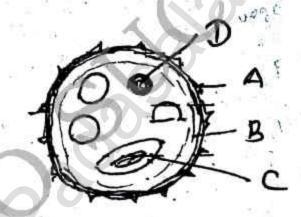
X Science

- Explain why, the ceilings of concert halls are curved.
- 16. Vinu dissolves 50 g of sugar in 250 ml of hot water, Sarath dissolves 50 g of same sugar in 250 ml of cold water. Who will get faster dissolution of sugar? and Why?
- 17. Fill in the blanks:
  - a) A reaction between an acid and a base is called neutral
  - b) When Lithium metal is placed in hydrochloric acid had gas is evolved.
- 18. Why are the rings of cartilages found trachea of rabbit?
- 19. Assertion and reason type questions.

Assertion: Cerebrospinal fluid is present throughout the central nervous system.

Reason: Cerebrospinal fluid has no such functions

- a) Assertion is correct and reason is wrong
- b) Reason is correct and assertion is wrong
- c) Both assertion and reason are correct
  - d) Both assertion and reason are wrong
- Draw and identify the parts A,B,C and D.



- 21. What is scratch?
- 22. How many grams are there in the following:
  - a) 2 moles of hydrogen molecule, H2
  - b) 4 moles of phosphorus molecule, PA

Part - III

# III. Answer any 7 questions: (Q.No.32 is compulsory)

S.Syed Shaban

- 23. a) Define inertia. Give its classification.
  - State Newton's second law.
- 24. a) State Boyle's law.
  - b) If you keep ice at 0°C and water at 0°C in either of your hands, in which hand you will feel more chillness? Why?
- 25. a) True or False. If false, give the correct statement.
  - i) All ores are minerals; but all minerals cannot be called as ores
  - ii) An alloy is a heterogeneous mixture of metals.
  - State two conditions necessary for rusting of iron.
- In what way hygroscopic substances differ from deliquescent substances.

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(3) X Science

- 27. a) Why does the reaction rate of a reaction increase on raising the temperature?
  - Define combination reaction. Give one example for an exothermic combination reaction.
- 28. Differentiate between the aerobic and anaerobic respiration.
- 29. a) What causes the opening and closing of guard cells of stomata during transpiration?
  - b) Who discovered Rh factor? Why was it named so?
- 30: Why did Mendel selected pea plant for his experiments?
- a) Name three improved characteristics of wheat that helped India to achieve high productivity.
  - State the applications of DNA finger printing technique.
- 32. <sub>92</sub>U<sup>235</sup> experiences one α-decay and one β-decay. Find number of neutrons in the final daughter nucleus that is formed.

#### Part - IV

#### IV. Answer all the questions:

 $3 \times 7 = 21$ 

- 33. a) i) What are the advantages of LED TV over the normal TV? [3]
  - ii) List the merits of LED bulb. [4]

(OR)

- b) Compare the properties of alpha, beta and gamma radiations.
- Give the salient features of "Modern atomic theory".

(OR)

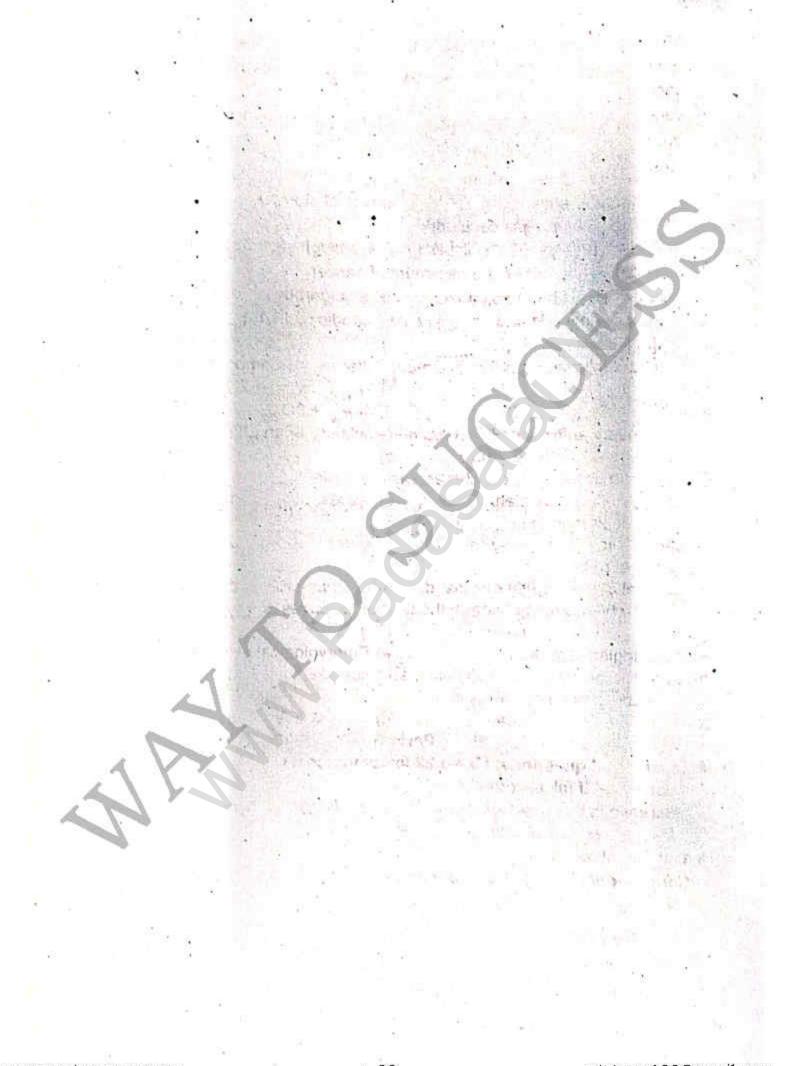
- b) How is ethanol manufactured from sugarcane?
- 35. a) With a neat labelled diagram, describe the parts of a typical angiospermic ovule.

(OR)

- i) What are the various routes by which transmission of human immuno deficiency virus takes place? [4]
  - ii) Differentiate between Type-1 and Type-2 diabetes mellitus. [3]

\*\*\*\*

# S.Syed Shaban



# HALF YEARLY EXAMINATION - 2022

Thirupathur

STD - X TIME: 3.00 Hrs

# SCIENCE

MARKS: 75

|     |                               |                         | PART         | -1   | N. S. (1929)  |  |
|-----|-------------------------------|-------------------------|--------------|--|---------------|--|
| L   | Choose the correct ans        | wers :                  |              | The state of the s |               | 12 x 1 = 12  |
| 1.  | The mass of a body is me      | asured o                | n planet E   | arth as M kg.  | When it is ta | ken to a planet of   |
|     | radius half that of the Ear   | th then va              | alue will be | kg a)  | 4M b) 2M      | c) M/4 d) M  |
| 2.  | One unit of electric energ    |                         |              | derwide -  |               |  |
|     | a) 1000 watt hour             | b) 100 w                | att hour     | c) 10 watt h   | nour c        | d) all the above   |
| 3.  | aprons are used               | to protec               | t us from o  | amma radiation   | on            | 7  |
| 77  | a) Lead oxide b) Iron         |                         |              |  |               |  |
| 4.  | Which of the following re-    |                         |              |  | an long       |  |
|     | a) Mass of a C-12 atom        |                         |              |  | igen atom     |  |
| 1   | c) 1/12th of the mass of a    |                         |              |  |               | Strate and dentily   |
|     | is an important me            |                         |              |  |               | Al   |
|     | Which of the following are    |                         |              |  |               | REPRESENTED IN THE PARTY.  |
|     | a) Carboxylic acids           |                         |              |  | lidehydes     | WHILE TOTAL  |
| 7.  | Carparian strips are pres     |                         |              |  | AD EXCHANGE   | West of Freehold   |
|     | a) Cortese b) pith            |                         |              |  | endodermis    | No. of Lots  |
| 8.  | A patient with blood group    |                         |              |  |               | loss. Which group  |
|     | of blood should be used to    | by doctor               | for transfu  | sion?  |               |  |
|     | a) 'O' group b) 'AB'          | group                   | c) A         | or B' group  | d) All blo    | ood group  |
| 9.  | The hormone which has         | positive e              | ffect on or  | ical dominand  | e is          |  |
|     | a) Cytokinin b) Auxi          |                         |              |  |               | 27   |
| 10. | Which method of crop im       | proveme                 | nt can be    | practised by a   | farmer if he  | is inexperienced?  |
|     | a) clonal selection b) r      | nass sele               | ction c)     | oureline select  | ion d) hyb    | ridization   |
| 11. | An inexhaustible resource     |                         |              |  |               |  |
|     | a) wind power b) soil         | fertility               | c) w         | ild life   | d) all the    | above  |
| 12. | All files are stored in the . |                         |              |  | ox c) pair    | nt d) scanner  |
|     | 3 4 4                         |                         | PART         |  |               |  |
|     | Answer any seven que          |                         |              | compulsory   |               | 7 x 2 = 14   |
|     | State Rayleigh's saw of s     |                         |              | HULL HOW Y   |               | ne tricker   |
|     | What is the role of the ea    | arth wire in            | n domestic   | circuits?  | OF LEAST      | The state of the s |
| 15. | Match the following:          |                         |              | The state of the s | 100 mg 100 mg |  |
|     | a) Infrasonic                 |                         | ompressio    | ons  | AC V Services | 200  |
|     | b) Echo                       | 100                     | 2 KHz        | CONTRACT.  | NI 14372      |  |
|     | c) ultrasonic                 |                         | 0 Hz         |  |               |  |
|     | d) High pressure region       | A STATE OF THE PARTY OF | Ultrasonogr  | CONTRACTOR OF THE PARTY OF THE  |               |  |
|     | Writes the alloys of stain    | less steel              | and its us   | es   |               | VALUE OF THE PARTY |
| 17  | Match the following:          | 101.0                   |              |  | L DO TO       |  |
|     | a) Nissil's granules          |                         | orebrain     | noncour custs  |               | 12 -   |
|     | b) Hypothalamus               |                         |              | nervous system   | U             |  |
|     | c) Cerebellum                 |                         | Cyton .      |  |               | Mark Mark in   |
|     | d) Schwann cell               | 1                       | lind brain   |  | 10            | CUENCE Page 1  |
|     |                               |                         |              | B. 186   | 10-3          | SCIENCE - Page 1   |

- 18. Draw and label the structure of a pollen grain.
- 19. How does insulin deficiency occur?
- 20. Fill in the blanks:
  - a) Chipho movement is initiated against .....
  - b) The blood sucking habit of leech is know as ......,
- 21. Why fossil fuels are to be converted?
- 22. The hydroxyl ion concentration of a solution is 1 x 10-4M. What is the pOH of the solution?

#### PART - III

#### Answer any seven questions. Q.No.32 is compulsory

 $7 \times 4 = 28$ 

- Distinguish between linear, arial and super ficial expansion.
- 24. a) Define one roentgen
  - b) Compare any two properties of alpho beta and gamma radiation.
- 25. Write applications of Avogadra's law?
- a) Define Hydrated salt
  - b) What happens when MgSo, 7H,O is heated? Write the appropriate equation?
- 27. What is called homologous series? Give any three of its characteristic?
- 28. Name the three basic tissues systems in flowering plants.
- 29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
- 30. How a cancer cell differ from a normal cell?
- 31. What do you understand by the term phenotype and genotype?
- 32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4:7. Find the ratio of their accelerations due to gravity.

#### PART-IV

# Answer all the questions. Draw diagram whereever necessary

 $3 \times 7 = 21$ 

- 33. a) State joule's law of heating?
  - b) An alloy of nickel and chromium is used as the heating element. Why?
  - c) How does a fuse wire protect electrical appliances? (OR)
  - a) Compare between Natural and Artificial Radioactivity?
  - b) Writes the uses of nuclear reactor?
- 34. a) Define Relative atomic mass
  - b) Give the salient features of "Modern atomic theory" (OR)
  - a) How does pH play an important role in everyday life?
  - b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
- 35. a) i) Write the physiological effects of Gibberellin.
  - ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? (OR)
  - b) i) Enumerate the importance of forest
    - ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

10 - SCIENCE - Page 2

Common Half Yearly Examination - December 2022

#### Standard 10

Time: 3.00 Hrs.

SCIENCE

Marks 75

| PART-  | · I                      |  |  |  |
|--|--------------------------|--|--|--|
| Note: Answer all the questions.  |                          |  |  |  |
| Choose the best answer:  |                          | 12×1=12  |  |  |
| <ol> <li>In which of the following sport the</li> </ol>  |                          |  |  |  |
|  | c) cycling               |  |  |  |
| Temperature is the average   |                          |  |  |  |
|  | b) sum of P.E ar         |  |  |  |
| <ul> <li>c) difference in T.E and P.E</li> <li>3) Velocity of sound in a gaseous medium</li> </ul> | a) difference in         | K.E and T.E  |  |  |
| by 4 times without causing a chan  | no in the tempera        | pressure is increased  |  |  |
| sound in the gas is  | ige in the tempera       | ture the welocity of   |  |  |
| a) 330 ms <sup>-1</sup> b) 660 ms <sup>-1</sup>  | c) 156 ms-1              | d) 900 mg 1  |  |  |
| 4) The radio isotope of helps to   | increase the prod        | urthilly of crop   |  |  |
| a) P-32 b) Iodine-131  | r) Cobalt-60             | d) No.24   |  |  |
| <ol><li>The number of periods and groups in</li></ol>  | the periodic table       | are Commercial   |  |  |
| a) 6, 16 b) 7, 17  | c) 8, 18                 | d) 7 18  |  |  |
| <ol> <li>Powdered CaCO<sub>3</sub> reacts more rapidly</li> </ol>                                  | than flaky Caro          | because of   |  |  |
| a) large surface area  | b) high pressure         |  |  |  |
| c) high concentration  | d) high tempera          |  |  |  |
| <ol><li>Mass of 1 mole of Nitrogen atom is</li></ol>   | a) man compand           | itui e   |  |  |
|  |                          | d) 14g   |  |  |
| <ol><li>The IUPAC name of an organic comp</li></ol>  | ound is 3 - methyl       | butan - 1 - of What  |  |  |
| type compound it is?   | and is a methyr          | outain - 1 - Gi. What  |  |  |
| a) Aldehyde b) Carboxylic acid   | C) Ketone                | all Minney   |  |  |
| 9) During transpiration there is loss of   | e) netone                | d) Alcohol   |  |  |
|  | c) Water di              |  |  |  |
| 10) The brain is suspended in a special flu  | id enviseement of        | None of the above  |  |  |
| a) Cerebrospinal fluid b) Water  |                          |  |  |  |
| 11) Anemophilous flowers have  | c) Blood                 | d) Saline water  |  |  |
| a) Socilla stiama  |                          |  |  |  |
| a) Sessile stigma  | b) Small smooth          | stigma   |  |  |
| c) Coloured flower   | d) Large feathery stigma |  |  |  |
| <ol><li>Paleontologists deals with</li></ol>   |                          | N 50 C   |  |  |
| <ul> <li>a) Embryological evidences</li> </ul>   | b) Fossil eviden         | res  |  |  |
| <ul> <li>c) Vestigial organ evidences</li> </ul>   | d) All the above         |  |  |  |
|  | -7                       |  |  |  |
| PART-II  |                          |  |  |  |
| swer any 7 questions: (Question number   |                          | (2)  |  |  |
| 13) Why does an actropaut float in   | 22 is compulso           | ry) 7×2=14   |  |  |
| 13) Why does an astronaut float in a spa   | ce shuttle?              |  |  |  |
| 14) Distinguish between the resistivity an   | d conductivity of        | a conductor.   |  |  |
| 13) State Soudy and rajan's displacement   | law.                     |  |  |  |
| 16) Define Atomicity.  |                          |  |  |  |
| 17) A hot saturated solution of copper sulp  | hato forms               | A large services and the services are the services and the services and the services and the services and the services are the services are the services are the services and the services are th |  |  |
| (8) Name the simplest betone and all the   | mate forms cryst         | als as it cools. Why?  |  |  |
| Supplied Kerolle and dive its  | Structural formul        | a.   |  |  |
| .9) Draw and label the structure of oxyson   | nes.                     |  |  |  |

(0) Mention the functions of endosperm. www.waytosuccess.org for all study materials visit our website https://www.zealstudy.me/ WAY TO SUCO BULL Updated join our telegram channel https://t.me/zealstudyofficial

347 Imprints of fossits tell us about evolution. How?

#21 A source producing a sound of frequency 90Hz is approaching a stationary fisherer with a speed equal to (1/10) of the speed of sound? What will be the frequency heard by the listener?

#### PART-III

# Answer any 7 questions: (Question Number 32 is compulsory) 7×4=28

23) Explain the construction and working of a 'compound microscope'.

24) Compare the properties of alpha, beta and gamma radiations.

a) What are the advantages of LED TV over the normal TV?

b) List the merits of LED bulb.

- 26) Define combination reaction. Give one example for an exothermic combination reaction.
- 27) What is corrosion? What are the methods of preventing corrosion?
- 28) N<sub>2</sub>+3H<sub>2</sub> → 2NH<sub>3</sub>
  (The atomic mass of nitrogen is 14, and that of hydrogen is 1)
  1 mole of nitrogen (\_\_\_\_\_g) + 3 moles of hydrogen (\_\_\_\_g) →
  2 moles of ammonia (\_\_\_\_g)
- 29) Why are leucocytes classified as granulo cytes and agranulocytes? Name each cell and mention its functions.
- 30) With a neat labelled diagram explain the structure of a neuron.
- 31) Biofertification may help in removing hidden bunger how?
- 32) What would be expected to happen if
  - a) Gibberellin is applied to rice seedlings.
  - b) A rotten fruit gets mixed with unripe fruits.
  - c) When cytokinin is not added to culture medium.

#### PART-IV

# Answer all the questions: (Draw diagrams wherever necessary) 3×7=21

33) a) i) What are the types of Inertia? Give an example for each type.

List any five properties of light.

#### (OR)

- b) i) Distinguish between ideal gas and real gas.
  - ii) Why does sound travel faster on a rainy day than on a dry day?

(iii) Which material protect us from radiation?

- 34) a) i) What is aqueous and non aqueous solution given an example?
  - ii) Explain the mechanism of cleansing action of soap.

#### (OR)

b) i) What is rust? Give the equation for formation of rust. State two conditions necessary for rusting of iron.

ii) How does pH play an important role in every day life?

35) a) i) How is the circulatory system designed in leech to compensate the heart structure? (OR)

ii) Why did Mendel selected Pea plant for his experiments?
(OR)

# b) i) Men addicted to tobacco lead to oxygen deficiency in their body? What could be the possible reason?

ii) What is e-waste? How are e-waste generated? What are the environmental impact of e-waste?

www.waytosuccess.org for all study materials visit our website https://www.zeaistudy.me/ way all updategjoin our telegram channel https://t.me/zealstudyofficial Tenkasi District Common Examinations Ts10S Common Half Yearly Examination - December 2022 21-12-2022 Standard 10 SCIENCE Marks: 75 Time: 3.00 Hrs. PART-I 12×1=12 Answer all the questions. Choose the most appropriate answer from the given four alternatives. Newton's III law is applicable b) for a body in motion a) for a body is at rest d) only for bodies with equal masses c) both a and b Speed of light in air or vacuum is c) 3.48×10<sup>7</sup> ms<sup>-1</sup> d) 348 ms<sup>-1</sup> b) 3×108 ms-1 a) 330 ms<sup>-1</sup> 3) Kilowatt hour is the unit of b) conductivity a) resistivity d) electrical power c) electrical energy 4) Velocity of sound in the atmosphere of a planet is 500 ms The minimum distance between the sources of sound and the obstacle to hear the echo, should be d) 50m c) 25m ) b) 20m a)-17m 5) Artificial radioactivity was disovered by a) Bequerel b) Irene Curie d) Neils Bohr c) Roentgen In the nucleus of 20Ca<sup>40</sup>, there are a) 20 protons and 40 neutrons b) 20 protons and 40 neutrons is a relative peroxidic property. b) Ionic radii a) Atomic radii d) Electro negativity c) Electron affinity 8) The brain of leech lies above the d) Crop b) Buccal cavity c) Pharynx a) Mouth The centromere is found at the centre of the chromosome. c) Sub-metacentric d) Acrocentric b) Metacentric a) Telocentric 10) The best way of direct dating fossils of recent origin is by b) Uranium lead method a) Radio-carbon method d) Both (a) and (c) c) Potassium - argon method 11) Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be d) Leptin b) Tannic acid c) Curcumin a) Nicotine 12) Which software is used to create animation? c) MS word d) Scratch b) PDF a) Paint PART-II 7×2=14 Note: Answer any seven questions. [Question No. 22 is compulsory] 13) 'X' rays should not be taken often give the reason. Explain Esterification reaction. Name three improved characteristics of wheat that helped India to achieve high productivity. 16) What precautions can be taken for preventing heart disease? 17) How are e-wastes generated? Write a short note on editor and its main parts. Name two maize hybrids rich in amino acid lysine. 20) Why does the sky appear in blue colour? 21) What is the importance of valves in the heart? 22) Vinu dissolves 50g of sugar in 250ml of hot water, Sarath dissolves 50g of

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and why?

same sugar in 250 ml of cold water. Who will get faster dissolution of sugar?

|  |  |  | DART TT  |   |
|--|--|--|--|---|
| 0200292500V480=0                           | att ing printer  | ji.  | PART-III   | 744-38  |
| Note: An                                   | swera  | ny seve  | en questions.  | 7×4=28  |
|  |  |  | is compulsory]   |   |
|  |  | e blank  |  |   |
| 1  | .) Posit   | ion is ar  | 1·   |   |
| 2  | 2) 1009  | % pure e   | ethanol is called  | <u></u> •0  |
|  |  |  | uses stomatal closure.   | i i i i i i i i i i i i i i i i i i i   |
|  |  |  | r is called  |   |
|  |  |  | uestions:  | 200   |
| 1  | 1) Cher  | mothera  | py: Chemicals  |   |
| - N  | Radi   | ation th   | erapy :  |   |
| 7  | <ol> <li>Hype</li> </ol>   | er tensio  | on : Hyper cholesterolo  | omia  |
|  | Glyc   | osuria:  | 7  |   |
|  | 3) Nucl  | lear fusi  | on: Extreme temperat   | ture  |
|  |  | lear fissi   |  |   |
| 19   | 4) Incr  | easing o   | crops: Radio phosphor  | rous  |
|  | Effe   | ctive fu   | nctioning of heart:  |   |
| 25)  | Match:   |  | THE PROPERTY OF THE PROPERTY O | SIVAKUWAR.M.  |
|  |  |  | Age of fossil  | difference machinidiles   |
|  |  |  | Function of heart  | SHI RAM MATORCHES<br>VALLOWN-622809   |
|  |  |  | Leukemia   | Vallern 627807  |
|  | d) C-1   |  |  | Tenkasi District.   |
| 251  | State  | whatha   | True or False if fal   | se write the correct statement  |
| 26)  | State  | viietiie   | sing sense are called  | oncogenes   |
|  | 1) Car   | icer cau   | sing genes are called  | of with a nationt's clothes   |
|  | 2) AID   | S is no  | t transmitted by conta   | act with a patient's clothes.   |
|  | 3) On  | dipping  | a pH paper in a solution   | on it turns into yellow, then the solution  |
|  | is b   | asic.  |  |   |
|  | 4) Nuc   | clear fus  | sion is more dangerous   | than nuclear fission  |
|  |  |  |  | Striair ridelear rission.   |
| 27)  | Cell ph  | one tow  | ers should be placed for   | ar away from the residential area. Why?   |
| 27)  | Cell ph  | one tow  | ers should be placed fa  | ar away from the residential area. Why?   |
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୍ୟୁ ବ୍ୟୁ ଧୁର୍ତ୍ତ୍ୱର୍ପ୍ୟୁ join our telegram channel https://t.me/zealstudyofficial Virudhunagar District Common Examinations V10S Common Half Yearly Examination - December 2022 Standard 10 Maximum Marks: 75 SCIENCE Time: 2,30 Hrs. PART-I Note: i) Answer all questions. 12×1=12 ii) Choose the most suitable answer. 1) The project the rockets which of the following principle(s) is / are required? a) Newton's third law of motion b) Newton's law of gravitation c) Law of conservation of linear momentum d) Both a and c Kilowatt hour is the unit of a) resistivity b) conductivity c) electrical energy d) electrical power 3) Artificial radioactivity was discovered by b) Irene Curie a) Bequerel d) Neils Bohr c) Roentgen is an important metal to form amalgam. b) Hg c) Mg d) Al 5) The number of components in a binary solution is b) 3 a) 2 d) 5 6) Rectified spirit is an aqueous solution which contains about of ethanol. b) 75.5% a) 95.5% c) 55.5% d) 45.5% 7) The endarch condition is the characteristic feature of b) stem a) root c) leaves d) flower 'Heart of heart' is called b) AV node a) SA node c) Purkinje fibres d) Bundle of His hormone is known as a 'time messenger'. b) Thyroxine a) Oxytocin c) Adrenaline d) Melatonin 10) Syngamy results in the formation of \_ a) Zoospores b) Conidia d) Chlamydospores c) Zygote 11) Vomiting centre is located in d) hypothalamus a) medulla oblongata b) stomach c) cerebrum 12) World 'No Tobacco Day' is observed on a) May 31 c) April 22 d) October 2 b) June 6 PART-II Answer any 7 questions: [Q.No. 22 is compulsory] 7×2=14 13) Draw a ray diagram to show the image formed by a convex lens when the object is placed between F and 2F. 14) State Boyle's law. 15) a) What is the audible range of frequency? b) What is the minimum distance needed for an echo? 16) How is ethanoic acid prepared from ethanol? Give the chemical equation. 17) a) Write the dental formula of rabbit. b) How is diastema formed in rabbit? www.waytosuccess.org for all study materials visit our website https://www.zeaistudy.me/

<sub>യ്∧</sub>പ്പെ<mark>പ്പാട്ടിated joi</mark>n our telegram channel https://t.me/zealstudyofficia V10S 18) Identify the parts A, B, C and D in the given figure.

- 19) What is the importance of valves in the heart?
- 20) What are allosomes? 21) How are e-wastes generated?
- 21) How are e-wastes general charge of 10c across two points in a circuit is
   22) The workdone in moving a charge of 10c across two points in a circuit is The workdone in moving difference between the points?

Answer any 7 questions: [Q.No. 32 is compulsory]

- PART-III  $7 \times 4 = 28$
- Describe rocket propulsion. Derive the ideal gas equation. 25) a) Mention two cases in which there is no Doppler effect in sound? b) Explain why, the ceilings of concert halls are curved?
- 26) a) What are the methods of preventing corrosion? b) State two conditions necessary for rusting of iron.
- 27) a) Differentiate Aerobic and Anaerobic respiration. b) What is respiratory quotient? 28) Illustrate structure and functions of brain.
- 29) a) What is bolting? How can it be induced artificially? b) Why are thyroid hormones referred as personality hormone? 30) Define Ethnobotany and write its importance.
- 31) How does rainwater harvesting structures recharge ground water?
- 32) a) What happens when Mg504.7H20 is heated?
- b) A solution is prepared by dissolving 45g of sugar in 180g of water. Calculate the mass percentage of solute.
- Answer ALL questions. Each question carries seven marks: [Draw diagram wherever necessary] Explain the construction and working of a 'compound microscope'.

3×7=21

(OR) a) Compare the properties of alpha, beta and gamma radiations. b) Define one roentgen.

PART-IV

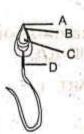
- a) Give the salient features of 'Modern Atomic Theory'. b) Define Atomicity.
- Give any two examples for heterodiatomic molecules.
  - (OR)
- Differentiate reversible and irreversible reactions.
- b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C'. On passing the gas 'C' through water, it becomes acidic. Identify A, B, C.
- 35) a) What is transpiration? Give the importance of transpiration. Enumerate any four functions of blood.
  - a) Give the harmful effects of alcohol.
  - b) What is metastasis?

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|      | a) cytokin   | in b) au   | xin d) gibbe   | rellin d) e  | ethylene                    |                  |               |            |                  |
| 10.  |  |  |  |  | ecent origin is             |                  |               |            |                  |
|      | a) radio c   | arbon m  | ethod b) ura   | nium lead  | d method c) p               | otassium - ar    | gon method    | d) both (a | ) and (b)        |
| 11.  | Excessive  | consun   | nption of alco   | hol leads  | s to                        | 38.5             |               | - Ta       |                  |
|      | a) loss of   | memory   | b) cirrhosis   | of liver c   | ) state of hallu            | cination d) s    | upression of  | brain func | tion             |
| 12.  | All files a  | re stored  | inni t   |  |                             |                  |               |            |                  |
|      | a) folder  | b) box o   | ) pai d) sca   | nner   |                             |                  |               |            |                  |
|      | en Martine de la constantion d | . 1  |  |  | PART - II                   | 1                |               |            |                  |
| II.  | Answer a   | ny 7 of  | the followin   | g. (Ques   | stion number                | 22 is compa      | ulsory)       |            | $7 \times 2 = 1$ |
|      |  |  | The second secon | Control of the Contro | eferred to tight            |                  |               | es?        |                  |
|      | State Boy  | No. of the last of |  | A CONTRACTOR   |                             |                  |               |            | +7               |
|      |  |  | se give the co   | orrect stat  | tement)                     |                  |               |            |                  |
|      | All the same of th | 100  |  |  | iod from left to            | right.           |               |            |                  |
| A    | The second second  | the state of the s |  | A CONTRACTOR OF THE PARTY OF TH | present in less             |                  | called solve  | nt         |                  |
| 16   | Fill in the  |  |  |  |                             |                  |               |            |                  |
|      |  |  | ame of rust i  | S  | b) 100% pure                | ethonol is ca    | alled         |            |                  |
|      |  |  | not be used  |  | DO RESIDENCE DE MI          |                  |               |            |                  |
|      | Match the  | 175  |  | Trial a W  |                             |                  |               |            |                  |
| 10.  | 1. Brain   | JOHOWAI  | a) pleura  |  |                             |                  | 3.            |            |                  |
|      | 2. Kidney  | # SEA  | b) capsule   |  |                             | A                | .0            |            |                  |
|      | 3 Heart  |  | c) meninge   | •  |                             |                  | N/N/          |            |                  |

10 - Science - 1

- d) Pericardium 4. Lungs
- 19. Draw the label the parts of sperm cell.



- 20. Name the types of stem cells.
- 21. What are the advantages of practising exercise in daily life?
- 22. Three resistors of resistances 5 ohm, 3 ohm, and 2 ohm are connected in series with 10V battery. Calculate their effective resistance and the current flowing through the circuit.

#### PART - III

III. Answer any 7 of the following. (Question number 32 is compulsory)

- 23. Differentiate convex lens and concave lens.
- 24. a) What is meant by electric current. b) An alloy of nickel and chromium is used as the heating element. Why?
- 25. What is a nuclear reactor? List out the essential parts of a nuclear reactor.
- 26. a) Identify the bond between H and F in HF molecule.
  - b) What property forms the basis of identification?
  - c) How does the property vary in periods and in groups?
- Differentiate reversible and irreversible reaction.
- 28. a) How does leach suck blood from the host?
  - b) How does locomotion takes place in leech?
- 29. a) Name the gaseous plant hormone. Describe its three different actions in plants.
  - b) Which hormone is known as stress hormone in plants? Why?
- a) Define Palaeontology?
  - b) Which organism is considered to be the fossil bird? Why is the bird considered to be a connective link?

making readestill symmetric en

- Enumerate the functions of forest.
- Calculate the number of moles in a) 27 g of Al b) 1.51 x 10<sup>23</sup> molecules in NH<sub>2</sub>Cl.

#### PART - IV

#### Answer all the questions.

- 33. a) i) State the universal law of gravitation and derive its mathematical expression.
  - ii) What are the causes of "Myopia". (OR) Street fire of partetion in Stories projections
  - b) i) List the merits of LED.
  - ii) Write any three features of Natural and artificial radio activity.
- a) i) What is rust? Give the equation for formation of rust.
  - ii) In what way hygroscopic substances differ from delinquescent substances. (OR)
  - b) i) List out the factors influencing the rate of a reaction.
  - ii) What is called homologous series?
  - iii) Give any three of its characteristics.
- 35. a) i) Name the three basic systems in flowering plants.
  - ii) What is transpiration? Give the importance of transpiration. (OR)
  - b) i) Draw and label the structure of a neuron.
  - ii) What precautions can be taken for preventing heart disease?

10 - Science - 2

Class:10

Kallakurich

| Name and Address of the Owner, where |   | / |   |   | V. |  |
|--------------------------------------|---|---|---|---|----|--|
| Register<br>Number                   | 1 | 0 | В | 1 | 1  |  |

# COMMON HALF YEARLY EXAMINATION - 2022 - 23

|      |          | ctions: (1) Check the question paper for f   | airn             | NCE<br>less of printing. If  | thér     | e is any lack of   | Max. Marks :<br>fairness,infoi |
|------|----------|--|------------------|--|----------|--------------------|--------------------------------|
|      |          | the Hall Supervisor immediate  |                  |  |          |                    |                                |
|      |          | (2) Use Black or Blue ink to write   | and              | underline and pe   | ncil     | to draw diagrar    | ms                             |
| No   | te:      | The American Pulpor ogniture rout parts  |                  |  |          |                    | -                              |
|      | W7F 0 57 | management of the second of th | PAR              | T-1  |          |                    | . (                            |
| NO   | te :     | (i) Answer all the questions   |                  |  |          |                    | 12x1=1                         |
|      |          | (ii) Choose the most appropriate answer f  | rom              | the given four alte  | rnat     | ives and write th  | e ontion code                  |
| 0.94 |          | and the corresponding answer   |                  |  |          |                    | ie option cour                 |
| 1,   | To       | project rockets which principle(s) is / are requi  | red?             | )  |          |                    |                                |
|      | a.       | Newton's third law of motion   |                  | Newton's law of gr   | avita    | ition              | No.                            |
|      | C.       | or conservation of linear momentum   | d                | Both a & c   |          |                    | V                              |
| 2.   | 20       | bulbs are connected in series. If one bulb is  | fuse             | ed and the remainin  | 10 15    | hulbo our island   |                                |
|      | CC       | onnected to the same power supply, the light in  | the              | room will be   | ig is    | builds are joined  | in series and                  |
|      | a.       | increased b. decreased   | e c              | remain the same  | A.       |                    |                                |
| 3.   | <u> </u> | isotope is used in the treatment of cancer   |                  | remain the same  | a.       | decreased muc      | h                              |
|      | a.       |  | C.               | Radio Cobalt   |          |                    |                                |
| 4.   |          | group contains the member of halogen fal   | milu             | Naulo Copali   | d.       | Radio Nickel       | F 9                            |
|      | а        | 17 <sup>th</sup> b. 15 <sup>th</sup>   |                  | A STATE OF THE PARTY OF THE PAR |          | bren.              |                                |
| 5.   | D        | eliquescence is due to   | Ct               | 18 <sup>th</sup>   | d.       | 16 <sup>th</sup>   | 2                              |
|      | a        |  |                  | 141124   |          | S., J. J. J. W.    |                                |
|      | C        | . Strong hatred to water   | D.               | Less affinity to wat   | er       | Y                  |                                |
| 6.   | В        | oiling point of Ethanol is   | d.               | Inertness to water   |          |                    |                                |
| . 11 |          | . 381 K b. 361 K   | -                | Arri IA  | The same |                    |                                |
| 7.   |          | Which is formed during anaerobic respiration?  | C.               | 351 K  | d.       | 341 K.             | " in it                        |
|      | а        | Carbohydrate b. Ethyl alcohol  |                  | Said All place and   |          |                    |                                |
| 8.   | ٧        | Which is called 'Heart of heart'?  | C                | Acetyl co. A   | d.       | Pyruvate           |                                |
|      |          | . SA node b. AV node   |                  |  |          |                    | 8 > 1                          |
| 9.   | 'F       | Richmond lang effect' is due to  | C,               | Purkinje fibre   | d.       | Bundle of His      |                                |
|      | а        | Gibberellins b. Cytokinins   |                  |  |          | W 22.11283.        | 9 " =                          |
| 10   |          | Polyphagia is a condition seen in  | C.               | Abscisic acid  | d.       | Ethylene           |                                |
|      |          | D. Obesity b. Diabetes mellitus  |                  |  |          | 107103             | 27                             |
| 11   | . V      | Which of the following is / are fossil fuel?   | C.               | Diabetes insipidus   | d.       | AIDS               |                                |
|      | i)       | Tar ii) Coal   |                  |  |          | 5 8                |                                |
|      | 8        | ), i only  |                  | petroleum  |          |                    |                                |
| 12   | 2. A     | An object is placed 25 cm from a convex lens who   | C.               | i and iii  | d.       | i, ii and iii      |                                |
| 8.   | 2        | 50 cm b. 16.66 cm  | ose f            | ocal length is 10 cm.  | The      | image distance is  | 3                              |
|      |          |  |                  | 0.00 Cm  | d.       | 10 cm              |                                |
| N    | ote      | (I) Answer all the questions Question  | ART              | - 11   |          |                    |                                |
| 13   |          |  |                  |  |          |                    | 7x2=14                         |
| 14   | 9. N     | Mention two cases in which there is no Dennise of  | fact.            | tar control of   |          |                    | 13.7440.400                    |
| 15   |          | The residue of the property of the second  | the said on \$1. |  |          |                    |                                |
| 16   | - 00     | the formation for the formation  | A                |  |          |                    |                                |
| -1   | 7. \$    | tate whether the Statement is true or false H  | fale             | Carrier and Control of the Control o |          |                    |                                |
|      | 9        | and the control of the components of   | 200              | Col binance Las  | men      |                    | 9 915                          |
| -    |          |  | 7 1              | H O  |          |                    |                                |
| 1    | B. 1     | THUS IS BUILDING TO CAMP ON OVERNOLE   |                  | 120  |          |                    |                                |
|      | 9. 1     | Draw and label the structure of avusemen   | 16               | w P  |          | ÷.                 | * * -                          |
| 4    |          | m m die blanks   |                  | 2  |          |                    |                                |
|      |          | a. Normal blood pressure is  | -                | 25757  |          | = 50               | 18                             |
| 2    | 21       | b. The part of human brain which acts as   |                  |  |          |                    | 3 80                           |
| 80   |          | which transmission of  | fhur             | nan immuno deficienc   | u vie    | un tokas et        | 25-1                           |
|      |          | o. The part of human brain which acts as<br>What are the various routes by which transmission o  |                  |  | y vii    | na rakes blace. Kh | K/10/Sci/1                     |

CS Starred with Carolina

22. Two bodies have a mass ratio of 3:4 The force applied on the bigger mass produces anacceleration of 12 ms-2. What could be the acceleration of the other body. If the same force acts on it. PART - III Note: (i) Answer all the questions. Question number32 is compulsory. 7x4 = 28a) State Boyle's law The acceleration due to gravity on the surface of the earth will be maximum at and minimum at What is meant by ultrasonic vibrations? State any three uses of ultrasonic vibrations 25. What are the uses of nuclear reactor? What is nuclear fusion reaction? 26. a) Give an example each i) gas in liquid ii) solid in liquid gas in gas Define combination reaction 27. a) What is an alloy? What are the reasons for alloying? 28. List out the parasitic adaptations of leech What is the importance of valves in heart? Match the following Column A Column B Nissil's granules Forebrain Hypothalamus Peripheral nervous system b. Cerebellum Cyton C. Schwann cell Hindbrain Identify the parts A. B. C and D. Name two organisms which reproduces through budding. How can you determine the age of the fossils? State the applications of DNA fingerprinting technique 32. An organic compound 'A' is widely used as a preservative and has the molecular formula C2H4O2. This compound reacts with ethanol to form a sweet smelling compound 'B' Identify the compound 'A' Write the chemical equation for its reaction with 'ethanol to form a sweet smelling compound 'B' b. Name the process PART - IV Note: (i) Answer all the questions. Draw diagrams wherever necessary 3x7=21 a. State Snell's law. Explain the construction and working of a 'Compound microscope' a. With the help of a circuit diagram derive the formula for the resultant resistance of three resistances connected a) in series and b) in parallel, b. State Ohm's law. a. Define atomicity Derive the relationship between Relative molecular mass and Vapour density. (or) a How is ethanol manufactured from sugarcane? b. Mention the IUPAC name of this compound CH, - CH - CH, - OH a. Name the parts of the hind brain With a neat labelled diagram explain the structure of a neuron. (or) a. What are the advantages of using biogas? Name two maize hybrids rich in amino acid lysine KK/10/Sci/2

### HALF YEARLY EXAMINATION - 2022

STD - X SCIENCE MARKS: 75 Thirupur TIME: 3.00 Hrs PART - I Choose the correct answers: The mass of a body is measured on planet Earth as M kg. When it is taken to a planet of radius half that of the Earth then value will be ...... kg a) 4M b) 2M c) M/4 d) M 2. One unit of electric energy is equal to d) all the above b) 100 watt hour c) 10 watt hour a) 1000 watt hour 3. ..... aprons are used to protect us from gamma radiation c) Lead d) Aluminium a) Lead oxide b) Iron 4. Which of the following represents I amu? b) Mass of a hydrogen atom a) Mass of a C-12 atom c) 1/12th of the mass of a c-12 atom d) Mass of 0-16 atom 5. ...... is an important metal to form amalgam a) Ag b) Hg c) Mg d) Al 6. Which of the following are used as ananethetics? d) Aldehydes a) Carboxylic acids b) Ethers c) Esters Carparian strips are present in the ...... of the root. d) endodermis c) pericycle b) pith a) Cortese 8. A patient with blood group 'O' was injured in an accident and has blood loss. Which group of blood should be used by doctor for transfusion? c) A' or B' group d) All blood group a) 'O' group b) 'AB' group 9. The hormone which has positive effect on opical dominance is c) Gibberellin d) Ethylene b) Auxin a) Cytokinin 10. Which method of crop improvement can be practised by a farmer if he is inexperienced? a) clonal selection b) mass selection c) pureline selection d) hybridization 11. An inexhaustible resources is / are c) wild life d) all the above a) wind power b) soil fertility a) folder b) box c) paint d) scanner 12. All files are stored in the ..... PART - II II. Answer any seven questions. Q.No.22 is compulsory 13. State Rayleigh's saw of scattering. 14. What is the role of the earth wire in domestic circuits? 15. Match the following: compressions a) Infrasonic 22 KHz b) Echo 10 Hz c) ultrasonic Ultrasonography d) High pressure region -16. Writes the alloys of stainless steel and its uses? 17. Match the following: a) Nissil's granules Forebrain b) Hypothalamus Peripheral nervous system c) Cerebellum Cyton d) Schwann cell Hind brain 10 - SCIENCE - Page 1

- 18. Draw and label the structure of a pollen grain.
- 19. How does insulin deficiency occur?
- 20. Fill in the blanks:
  - a) Chipho movement is initiated against .....
  - b) The blood sucking habit of leech is know as .......
- 21. Why fossil fuels are to be converted?
- 22. The hydroxyl ion concentration of a solution is 1 x 10-4M. What is the pOH of the solution?

#### PART - III

#### Answer any seven questions. Q.No.32 is compulsory

 $7 \times 4 = 28$ 

- 23. Distinguish between linear, arial and super ficial expansion.
- 24. a) Define one roentgen
  - b) Compare any two properties of alpho beta and gamma radiation.
- 25. Write applications of Avogadra's law?
- a) Define Hydrated salt
  - b) What happens when MgSo, 7H,O is heated? Write the appropriate equation?
- 27. What is called homologous series? Give any three of its characteristic?
- 28. Name the three basic tissues systems in flowering plants.
- 29. Differentiate between systole and Diassole. Explain the conduction of heart beat.
- 30. How a cancer cell differ from a normal cell?
- 31. What do you understand by the term phenotype and genotype?
- 32. The ratio of mass of two planets is 2:3 and the ratio of their radil is 4:7. Find the ratio of their accelerations due to gravity.

#### PART-IV

### Answer all the questions. Draw diagram whereever necessary

 $3 \times 7 = 21$ 

- 33. a) State joule's law of heating?
  - b) An alloy of nickel and chromium is used as the heating element. Why?
  - c) How does a fuse wire protect electrical appliances? (OR)
  - a) Compare between Natural and Artificial Radioactivity?
  - b) Writes the uses of nuclear reactor?
- 34. a) Define Relative atomic mass
  - b) Give the salient features of "Modern atomic theory" (OR)
  - a) How does pH play an important role in everyday life?
  - b) A solid compound 'A' decomposes on heating into 'B' and a gas 'C', on passing the gas 'C' through water, it becomes acidic. Identify A, B and C.
- 35. a) i) Write the physiological effects of Gibberellin.
  - ii) The degenerated wing of a kiwi is an acquired character. Why is it an acquired character? (OR)
  - b) i) Enumerate the importance of forest
    - ii) If one pollen grain produces two male gametes, how many pollen grains are needed to fertilize 10 ovules?

10 - SCIENCE - Page 2

# HALF YEARLY EXAMINATION - 2022

| 1 | 0   |       | Std                            |
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SCIENCE

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| -17 | 114 |      | 1000  |   |        |
| 4   | _   |      | _     | _ | _      |

| Tin          | ne : 3.00 hrs.                       |  | Marks: /5  |
|--------------|--------------------------------------|--|--|
| 1487         | PAR                                  | π-1  |  |
| -14          | Answer all the questions.            |  | 12 X 1 = 12  |
| 1.           | Impulse is equal to                  |  |  |
|              | a) Rate of change of momentum        | b) Rate of force   | e and time   |
| 1.7          | c) Change of momentum                | d) Rate of char  | The state of the s |
| 2.           | Unit of temperature is               |  |  |
| 307          | a) Celsius                           | b) Kelvin  |  |
| 1            | c) Fahrenheit                        | · d) None of the   | above  |
| 3.           | Gamma radiations are dangerous b     |  |  |
| 3            | a) it affects eyes                   | b) it affects tis  | sues   |
| 9000         | c) it produces genetic disorder      |  |  |
|              | d) it produces enormous amount o     | f heat   |  |
| 4,           | Which of the following is a triatomi |  |  |
| 1            | a) Glucose                           | b) Helium  |  |
|              | c) Carbon di oxide                   | d) Hydrogen  |  |
| 5.           | Which of the following is a the univ | versal solvent?  | <b>扩</b> 、作品:  |
|              | a) Acetone b) Benzene                | c) Water   | d) Alcohol   |
| 6.           | is used as anesthet                  | The state of the s |  |
|              | a) Carboxylic acids                  | b) Ethers  |  |
| - EV         | c) Esters                            | d) Aldehyde  |  |
| 7.           | Rectified spirit in an aqueous solu  | tion which contains  | about of   |
|              | ethanol.                             |  | 推 100 CEST 100 TEST  |
|              | a) 95.5% b) 75.5%                    | c) 55.5%   | d) 45.5%   |
| 8.           | The coelomic fluid of beech contain  | ns   |  |
| THE STATE OF | a) lymph b) haemoglobin              | c) cerobro fluid   | d) spiral fluid  |
| 9.           | Node of Ranvir is found in           |  |  |
| 7            | a) Muscles b) Axons                  | c) Dendrites   | d) Cyton   |
| 10.          | The plant which propagates with t    | he help of its leave   | s is   |
| - All        | a) Onion b) Neem                     | c) Ginger  | d) Bryophyllum   |
| 11.          | Which type of cancer affects lymp    | h nodes and spleen?  |  |
| 1            | a) Carcinoma b) Sarcoma              | c) Leukemia  | d) Lymphoma  |
| 12.          | Which software is used to create a   | nimation?  |  |
|              | a) Paint b) PDF                      | c) MS Word   | d) Scratch   |
|              | PART                                 | -11  | 7 X 2 = 14   |
| 177          | Answer any seven questions. Q        | uestion No. 22 is co   | ompulsory.   |
| 13.          | State Boyle's law.                   | Yang and the same  |  |
| 14.          | Why are traffic signals red in colou | r?   |  |
| 1            |                                      | HTV 10 - 01-00-01  | (EM)   |

#### 15. Match the following.

- 1) Electric current Volt
- 2) Potential difference Ohm meter
- 3) Specific resistance Watt
- 4) Electrical power Joule
- 5) Electrical energy Ampere
- State true or false. (If false give the correct statement)
   Sodium Chloride dissolved in water forms a non-aqueous solution.
- 17. What is rust? Give the equation for formation of rust.
- 18. Differentiate reversible and irreversible reactions.
- 19. Write a short note on mesophyll.
- 20. Why are thyroid hormones referred as personality hormone?
- 21. What are allosomes?
- 22. Calculate the gram molecular mass of the Water.

#### PART-III

7 X 4 = 28

# Answer any seven questions. Question No. 32 is compulsory.

- Define inertia. Give its classification.
- Differentiate convex lens and concave lens.
- List the merits of LED bulb.
- 26. Write notes on i) Saturated solution and ii) Unsaturated solution
- Differentiate soaps and detergents.
- 28. List out the parasitic adaptations in leech.
- 29. Write a neat labeled diagram of a neuron.
- 30. How do you differentiate homologous organs from analogous organs?
- Enumerate the importance of forest.
- 32. Calculate the pH of 0.001 molar solution of HCI.

#### PART-IV

### Answer all the questions.

3 X 7 = 21

- 33. State and prove the law of conservation of linear momentum. (OR)

  Differentiate the eye defects: Myopia and Hydpermetropia.
- 34. How does PH play an important role in every day life? (OR)

  How is ethanol manufactured from sugarcane?
- 35. Where are estrogens produced? What is the role of estrogens in the human body? (OR)

Discuss the importance of biotechnology in the field of medicine.

HTV 10 - அறிவியல் (EM) பக்கம் - 2

# **COMMON HALF YEARLY EXAMINATION - 2022**

|            |   |         | 202    |   |   |   |   |
|------------|---|---------|--------|---|---|---|---|
| Standard ) | K | Reg.No. | $\Box$ | 0 | 0 | 1 | 4 |
| SCIENCE    | : |         |        |   |   |   |   |

|      | SCI  | ENCE   |  |  |  |
|------|--|--|--|--|--|
| Tim  | e: 3.00 hrs. P   | art - I Marks: 75  |  |  |  |
| 1.   | Choose the correct answer:                                       | 12 x 1 = 12  |  |  |  |
| 1.   | The mass of a body is measured m                                 | planet Earth as 2 M kg. When it is taken to  |  |  |  |
|      | a planet of radius half that of the Ea                           | rth then its value will be kg  |  |  |  |
|      | a) 4 M b) 2 M  | c) M/4 d) M  |  |  |  |
| 2.   | The velocity of sound in air at a parti                          | cular temperature is 330 ms. What will be  |  |  |  |
|      | its value when temperature is double                             | ed and the pressure is halved?   |  |  |  |
|      | a) 330 ms <sup>-1</sup> b) 165 ms <sup>-1</sup>                  | c) $330 \times \sqrt{2} \text{ ms}^{-1}$ d) $320 \text{ ms}^{-1}$  |  |  |  |
| 3.   | The gram molecular mass of water n                               | nolecule is  |  |  |  |
|      | a) 16 g b) 18 g  | c) 32 g d) 17 g  |  |  |  |
| 4.   | Chemical formula of Rust is                                      |  |  |  |  |
|      | a) FeO x H <sub>2</sub> O b) FeO <sub>4</sub> x H <sub>2</sub> O | c) Fe,O, x H,O d) FeO  |  |  |  |
| 5.   | The general molecular formula of alk                             | ynes is  |  |  |  |
|      | a) $C_n H_{2n}$ b) $C_n H_{2nx2}$                                | c) C <sub>n</sub> H <sub>2n-2</sub> d) C <sub>n</sub> H <sub>2n+1</sub>  |  |  |  |
| 6.   | Kreb's cycle takes place in                                      |  |  |  |  |
|      | a) chloroplast   | b) mitochondria matrix   |  |  |  |
|      | c) stomata   | d) inner mitochondrial membrane  |  |  |  |
| 7.   | The animals which give birth of young                            | g ones are   |  |  |  |
| 2240 | a) oviparous b) viviparous                                       | c) ovoviviparous d) all the above  |  |  |  |
| 8.   | Which one of the following shows cor                             | rect composition of blood?   |  |  |  |
|      | a) plasma - blood + lymphocyte                                   | b) serum - blood + fibrinogen  |  |  |  |
|      | c) lymph - plasma + RBC + WBC                                    |  |  |  |  |
|      | d) blood - plasma + RBC + WBC + p                                |  |  |  |  |
| 9.   | Which one of the following hormones                              | is naturally not found in plants?  |  |  |  |
|      | a) 2, 4-D b) GA3   | c) gibberellin d) IAA  |  |  |  |
| 0:   | The number of chromosomes found in                               | n human beings are   |  |  |  |
|      | a) 22 pairs of autosomes and one pa                              | ir of allosomes  |  |  |  |
| 1500 | b) 22 autosomes 1 allosomes                                      | The state of the s |  |  |  |
|      | c) 46 autosomes  |  |  |  |  |
|      | d) 46 pairs autosomes and 1 pair of                              |  |  |  |  |
| 1.   | in a nexaploid wheat (2n = 6X = 42) to                           | he haploid (n) and basic (X) number of   |  |  |  |
|      | chromosomes respectively are                                     | TV = -723725 -   |  |  |  |
|      | a) n = 7 and x = 21  | b) n = 21 and X = 21   |  |  |  |
| (1)  | c) n = 7 and X = 7   | d) n = 21 and X = 7  |  |  |  |

12. An inexhaustible resources is

a) wind power b) soil fertility

c) wild life

d) all the above

(2)

X Science

#### Part - II

II. Answer any 22 questions. (Q.No.22 is compulsory)

7 x 2 = 14

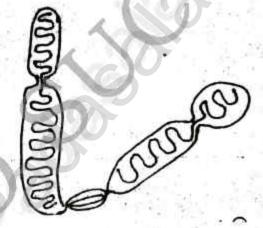
- 13. Why does the sky appear in blue colour?
- 14. Match the following:
  - a) Fuel

- Lead

- b) Moderator
- Heavy water
- c) control rods

Cadmium rods

- d) Shield
- Uranium
- What is rust? Give the equation for formation of rust.
- 16. i) Solubility is the amount of solute dissolved in \_\_\_\_\_ g of solvent
  - ii). The value of ionic product of water at 25°C is \_\_\_\_\_
- 17. How is diastema formed in rabbit?
- 18. Who discovered Rh factor? Why was it named so?
- 19. What is metastasis?
- Identify the part A,B,C,D in the given figure.
  - A) Telomere
  - B) Secondary construction
  - C) primary constraction
  - D) Satellite



- 21. What would happen if the habitat of wild animals is disturbed?
- Three resistors of resistances 5 ohm, 3 ohm and 2 ohm are connected in series
  with 10 V battery. Calculate their effective resistance and the current flowing through
  the circuit.

#### Part - III

III. Answer any 7 questions. (Q.No.32 is compulsory)

 $7 \times 4 = 28$ 

- List any five properties of light.
- Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.
- 25. Mention four cases in which there is no Doppler effect in sound?
- 26. Find the percentage of nitrogen in ammonia.
- What happens when MgSO<sub>4</sub>.7H<sub>2</sub>O is heated? Write the appropriate equation.
  - b) Define solubility.

(3)

X Science

# 28. Assertion and Reasoning:

- a) If both A and R are true and R is correct explanation of A
- b) If both A and R are true, but R is not the correct explanation of A
- A is true but R is false

d) both A and R are false

Assertion: Corpus callosum is present in space between the duramater and plamater

Reason: It serves to maintain the constant intracranial pressure

- 29. Write the physiological effects of sibberelling.
- 30. What do you understand by the term phenotype and genotype?
- 31. Differentiate between Type-1 and type-2 diabetes mellitus.
- Calculate the pH of 1 x 10<sup>-4</sup> molar solution of NaOH.

#### Part - IV

IV. Answer all the questions. (Draw diagrams wherever necessary) 3 x 7 = 21

State and Prove the law of conservation of linear momentum.

(OR)

- b) What is the nuclear reactor? Explain its essential parts with their functions
- 34. a) i) Differentiate between hygroscopic substances and deliquescence
  - ii) How does pH play an important role in everyday life?

(OR)

- b) i) Differentiate soaps and detergents
  - ii) An organic compound 'A' is widely used as a preservative and has the molecular formula C<sub>2</sub>H<sub>4</sub>O. This compound reacts with ethanol to form a sweet smelling compound 'B'. Identify the compound 'A'
- 35. a) Describe and name three stages of Cellular Respiration that Aerobic Organisms use to obtain energy from Glucose

(OR)

- b) (i) Define Ethnobotany and write its importance.
  - (ii) Write short notes about Biofortification.